DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102

San Francisco City Planning Commission

Environmental Impact Report

HOLIDAY INN - MASON & O'FARRELL

Draft
EE 79.283

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Written comments should be sent to
the Office of Environmental Review,
45 Hyde Street, Room 319,
San Francisco, CA 94102

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I. SUMMARY

PROJECT DESCRIPTION

Holiday Inn of America, in association with Trebor Company and Grosvenor Properties, Ltd., proposes to construct a new 805-room hotel in the block bounded by Mason, O'Farrell, N. 5th and Ellis Streets. The project site would include Lots 11, 12 and 20 of Assessor's Block 326 presently owned by GHT Associates.

The proposed Holiday Inn would consist of a 4-level base structure containing lobby, restaurant, coffee shop, retail shops and banquet facilities, 3-levels of underground parking for a total of 81 vehicles, and a 27-story, 300 ft. high hotel tower with 805 guest rooms. Pedestrian access would be possible from all 4 streets with the main vehicular entrance located at the southwest corner of the site. Vehicle entry would be from Ellis Street and exiting to Mason Street. Entry and exit to the parking garage would be from Ellis Street. Loading docks would be located near the northeast corner of the site off of N. Fifth Street.

The project would require displacement of Fairway Rent-a-Car and the existing parking lots on the site. Lots 10 (the Maria Manor Hotel), 13 (the Heine Piano Company Building), and 22 (a vacant lot) are not included as part of this project. Project design alternatives include construction on Lot 13.

A 2-story domed-glass observation deck would top off the structure. Curved profiles would be included at the entry lobby and the roof section over the banquet facilities. The building would consist of precast concrete panels on a steel frame and bronze-tinted glass.

ENVIRONMENTAL EFFECTS

A. ZONING AND LAND USE

The project would conform to the City Planning Code 320-I Height and Bulk District restrictions, limiting development to 320 ft. in height, and

the present zoning classification of C-3-G (Downtown General Commercial designation). The proposed tower height of 300 ft. and the proposed maximum diagonal dimension of the tower of 190 ft. (above a height of 150 ft.) would be less than the permitted maximums for height and diagonal dimension of the tower.

B. SOCIAL CHARACTERISTICS

Because of the project's location at the northeast perimeter of the Tenderloin District, the North of Market Planning Coalition and other interest groups have commented on the possible encroachment of commercial businesses into residential areas within the Tenderloin, thereby raising property values and escalating existing problems of high rents, the unavailability of family and senior citizen housing, and displacement of facilities. Proposed plans for the area also include construction of a 410 room addition to the Hilton Hotel (1/2 block west of the project), and construction of a 1000 room Hotel Ramada (immediately south of the project). Existing and proposed rent controls, extension of the moratorium regulating conversion of residential hotels to transient hotels, legislative actions regulating the conversion of apartments to condominiums, approval of the Urban Development Action Grant (UDAG) proposal by the U.S. Department of Housing and Urban Development for renovation of 900 residential hotel units, and the construction of new federally-subsidized housing would make the likelihood of a trend towards displacement of senior citizens and low-income families less likely. No housing displacement would result directly from the construction of this project, as only the Fairway Rent-a-Car and parking businesses would be displaced.

C. ECONOMIC, EMPLOYMENT AND FISCAL FACTORS

The project would result in demolition of about 30,000 sq. ft. of leasable parking space used by 80-100 cars on the project site. This would be replaced with parking for 81 cars (approximately 30,000 gross sq. ft.), about

2,000 sq. ft. of leasable retail space, and 410,000 gross sq. ft. of above grade hotel space (excluding mechanical and observation deck areas).

The project would directly employ approximately 360 full and part-time employees, an increase of 352 over the present level of 8 jobs. On-site project construction would provide an estimated 370 person years of construction labor. Guest expenditures for the 805 rooms and outside expenditures on restaurants, retail stores, local transportation, sightseeing, entertainment, etc., are estimated to exceed $18.2 million annually. Gross receipts for hotel-operated food and beverage facilities and retail spaces are estimated at $5.4 million per year, resulting in a $344,000 increase over the existing $7000 in sales tax revenues. Hotel tax revenue in the opening year is estimated at $1.6 million. The Holiday Inn would be expected to be a net fiscal benefit to the City because of its hotel room, property and direct sales tax contributions. These tax revenues would be anticipated to offset any increased costs of public services (including Muni and BART).

It is expected that Fairway Rent-a-Car and the parking lots on the proposed site would relocate in San Francisco, although Fairway may move outside the Downtown area and consolidate its business at its 264 South Airport Boulevard location. The project would result in an increase in city property tax revenues from approximately $35,000 to between $405,000 and $507,000 in 1982.

D. URBAN DESIGN FACTORS

The exterior surfaces of the U-shaped tower are expected to consist of tinted glass and precast concrete panels. The surface of these materials would be of light-to-medium color and would shift in hue depending upon sun and sky conditions. The tower would be similar in scale to the neighboring (27-story) Hilton Hotel, the (33-story) St. Francis Hotel, the proposed 410 room (27-story) Hilton Hotel Tower No. 2, and the 1000-room (32-story) Hotel Ramada. Existing 5-9 story structures to the immediate north, south and east of the project would contrast with the tower but would generally be comparable in height to the base building.

The ground level building facade would be set back 10 ft. along Mason, N. 5th, and Ellis Streets to provide improved visibility for drivers leaving the underground garage, off-street guest loading area, and the service docks, and to allow for less crowded pedestrian flow within the block. Pedestrian entries off O'Farrell St. would be set back 18 ft. from the existing sidewalk to improve pedestrian flows at the intersections with Mason and N. 5th Streets.

Shadows cast by the project would cover portions of the Maria Manor Hotel in the late afternoon but would not affect public parks or plazas. The proposed tower would shade the frontage along O'Farrell Street and the fronts of buildings across the street at midday during the spring, winter and fall; and would partially shade O'Farrell Street at midday during the summer.

The tower would be on the northern half of the site to reduce the impact of the building mass on the Maria Manor Hotel, and to allow for partial retention of views and sunlight for its residents. A domed-glass observation deck has been designed for the rooftop area. A curved skylight above the banquet area, and curved profiles at the lower lobby entry would continue this design element. Further detail would be provided by the set back of second level windows over the guest loading area to create a colonnade.

The entrances would be landscaped and deciduous trees, similar to those at the northern side of O'Farrell Street, would be planted along the site's perimeter.

E. TRANSPORTATION, CIRCULATION, AND PARKING

The proposed project would cause some traffic delays with the greatest change arising at the intersection of Mason and Ellis Streets and resulting in some impacts on transit (Muni Lines 25 & 31) in the area. Peak p.m. traffic would increase by 2% on O'Farrell Street and up to 12% on Mason Street. Existing off-street parking at the site would be replaced by 81 underground parking spaces. Some increase in off-street parking demand is expected with

the project, although weekday vacancies occur at lots within 4 blocks of the project based on the February 1980 parking survey. These vacancies would accommodate project demand. Pedestrian traffic would increase during the p.m. peak and noon hours resulting in some conflicts, but pedestrians would have some choice in walking speed.

Construction traffic would temporarily contribute to congestion in the area due to possible restriction of traffic lanes by construction barricades and to haul trucks entering and leaving the project site. Installation of underground utility connections would cause intermittent nighttime traffic disruption along streets adjacent to the site.

Estimated traffic due to the project would be 1,930 trips per day and 160 trips during the p.m. peak hour (5-6 p.m.). Transit trips are estimated at 2,350 trips per day and 520 trips for the p.m. peak hour. About 40% of the Holiday Inn employees would use Muni, resulting in an increase of less than 1% in the p.m. peak hour ridership for all lines except Golden Gate Transit bus service. Design of the main vehicular entry would handle 2 tour buses in addition to some taxi queuing so as to reduce curbside congestion. No vehicle access to the site would occur from O'Farrell Street, reducing potential impacts to this transit-preferential street.

Loading dock facilities off N. 5th Street would result in congestion during the back-in of trailer trucks. These activities would generally not occur during the peak traffic hours based on present teamsters' schedules.

F. METEOROLOGY AND AIR QUALITY

Increased windspeed ratios would occur along O'Farrell and Mason Streets under northwesterly winds with the exception of the corner of Ellis and Mason Streets. For westerly winds, the wind speed ratio would increase for O'Farrell Street and would remain similar to existing conditions for the other perimeter streets.

G. NOISE

Noise impacts due to project construction would cause possible daytime sleep interference at the neighboring Maria Manor Hotel for the 24 month construction period.

H. ENERGY

Two heating systems are under construction, a heat pump system and a fan-coil system. The connected kilowatt (kw) load would be approximately 2270 KW for the heat pump system and 2050 KW for the 4-pipe fan-coil system. Annual electrical consumption would be approximately 7-9 million KWH; annual natural gas consumption would be approximately 0.5-0.9 million cu. ft.

I. COMMUNITY SERVICES AND UTILITIES

The project would increase demands for City water and sewer services and Golden Gate Disposal Co. solid wastes disposal. These demands would be met by existing service systems and would not require additional personnel, equipment or facilities.

MITIGATION MEASURES PROPOSED BY THE PROJECT SPONSORS

Vehicles would not be permitted to exit from the main guest entry onto Ellis Street. The sidewalk would be widened from 9 ft. to 19 ft. along Mason Street and from 11 ft. to 29 ft. at the O'Farrell Street entries to improve pedestrian flows and visibility of vehicles entering the site.

Trees would provide street level visual amenities. These trees would be maintained so as not to block views of drivers exiting the site. Potentially distracting or cluttering elements, such as signs, directories and graphics, would be controlled to avoid garish or otherwise inappropriate design in public view areas.

The project sponsors would aid in obtaining jobs for qualified Tenderloin residents during construction and at the hotel. The project sponsors have assisted in providing financial information for the Urban Development Action Grant (UDAG) proposal applied for by the City from the U.S. Department of Housing and Urban Development. This proposal would rehabilitate 900 low-cost residential hotel units in the eastern Tenderloin. Approval of the UDAG application would relieve increased costs to low-income residents from increasing property values as a result of project approval.

Construction equipment would be maintained and operated to minimize exhaust and noise emissions. To reduce the amount of airborne particulates during excavation, the site would be regularly sprinkled with water.

All guest rooms would comply with the interior sound level requirements of the California Administrative Code because of the use of 1/4 inch glass.

All energy conversion systems would comply with the standards set by the California Energy Commission. All exterior walls would be insulated to reduce heat/loss and absorption through the structure. Use of tinted glass would result in a 7-20% savings in energy to heat and air condition.

ALTERNATIVES TO THE PROPOSED PROJECT

The "No Build Alternative" would preserve options for future development at the site for other purposes. The comparatively low value of the current use would return less tax revenue to the City and less rent to the current owners than the proposed project. Impacts described for the proposed project would not occur.

Modifications of the project to reduce the bulk of the structure and to eliminate potential development bonuses would result in a building of approximately 200 ft. height and 525 guest rooms or 280 rooms (35%) less than the proposed project. Under the "No Bonus Alternative" impacts would generally remain the same as for the proposed project with reductions in

shadows, visibility of the project, and traffic and transit congestion. Revenues would be approximately 31% less than for the project but above revenues of the existing rental car and parking lot uses.

Under the "Combination Hotel/Apartment Alternative" the project would conform to the unsuccessful November 1979 Proposition 'O' which called for a reduction in height and floor area ratio limits for Downtown buildings. This alternative would allow a limit of 8:1, floor area ratio (FAR) or 8 times the square footage of the site. This FAR limit is based on the inclusion of housing within the development. Under the "Combination Hotel/Apartment Alternative" the design would consist of a 150 ft. high, rectilinear building with 420 guest rooms and 49 two-room apartment units. Apartment units would accommodate rentals for a period from 1 month to a year in length. This design would have the least effect on views, traffic or transit of any of the alternatives.

Under the "Highrise Alternative," the project would consist of a 33-story (320 ft.) building with 936 guest rooms. The bulk of the structure would be along the Mason Street frontage with a motorcourt entrance at the northeast corner of the site. This design would result in an increase in traffic congestion and delays to transit operations for the 38 and 38X Geary buses in the transit-preferential lane along the right curbside of O'Farrell Street. This design would result in revenues similar to those from the proposed project.

II. PROJECT DESCRIPTION

A. OBJECTIVES OF THE PROPOSED PROJECT

Holiday Inn of America, in association with Trebor Company and Grosvenor Properties, Ltd., proposes to construct an 805-room hotel in Downtown San Francisco. The project, designed by William Tabler Associates, Architects, of New York, and Gensler and Associates, Architects, of San Francisco, would be operated by Holiday Inn Corporation. Holiday Inn is the largest hotel operator within San Francisco, with 2290 rooms available in its existing 5 hotels. Completion of this project would add 805 rooms to meet anticipated demand for hotel rooms.

B. LOCATION OF THE PROPOSED PROJECT

The proposed building would be located on Assessor's Block 326, which is bounded by Mason, O'Farrell, Powell and Ellis Streets (see Figure 1, p. 11). The project would occupy a majority of the western half of the block bounded by Mason, O'Farrell, N. 5th and Ellis Streets. The western portion of the block contains approximately 44,000 sq. ft. and is currently divided into 6 lots (Lots 10, 11, 12, 13, 20 and 22).

The hotel would occupy Lots 11, 12, and 20, totaling 30,100 sq. ft. The Maria Manor Hotel (Lot 10), the Heine Piano Company Building (Lot 13), and the vacant land along N. 5th Street (Lot 22) are not included in the project (see Figure 2, p. 11).

The project site is at the eastern edge of the Tenderloin District immediately across from the Hilton Hotel to the west and approximately 1-1/2 blocks southwest of the Union Square Shopping and Hotel district.

C. SITE AND BUILDING PLANS

The project would consist of a 27-story (approximately 300 ft.) building containing 4 floors of base building (Levels 1 thru 4), 23 floors of guest rooms (Levels 5 thru 27) and 3 floors of underground parking and building

FIGURE 1
SITE LOCATION

MILES

1/2 0 1/2

SOURCE: U.S. GEOLOGIC SURVEY & STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES, 1968, SAN FRANCISCO NORTH QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPHIC), AND EDITED BY DAMES & MOORE.

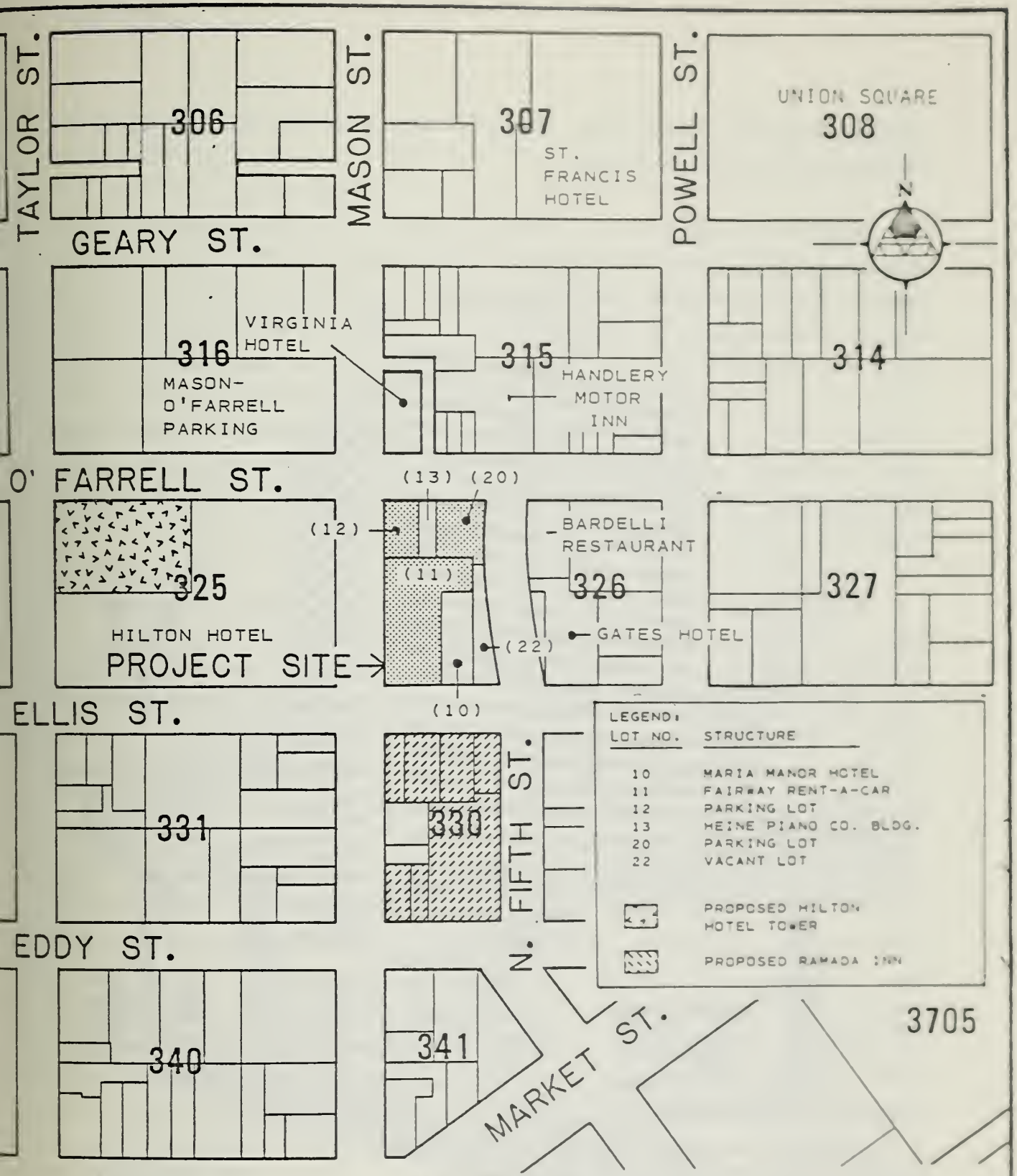

FIGURE 2

PROJECT SITE & VICINITY

SOURCE: DAMES & MOORE

FEET

100 0 100 200 300 400 500

services (Levels B-1 thru B-3). Figure 3 illustrates the relationship of the proposed base building and tower.

Level 1 (see Figure 4, p. 18) would consist of a porte cochere* in the southern section of the site, off Mason Street, and an entry lobby, commercial space, building services and administrative spaces in the northern section. Baggage check-in areas on Level 1 would be under cover and off-street within the porte cochere area. A sundry-type shop for use by hotel guests or other pedestrians would be in this area. Dock area for building services and trailer trucks for convention or trade-show displays would be provided separate from guest entrances and off N. 5th Street. Vehicular entry to the parking garage would be provided off Ellis Street. Escalators and elevators would be provided from Level 1 to Level 2 for check-in of arrivals.

Level 2 (see Figure 4, p. 18) would consist of the main lobby, registration, a 250-seat capacity lounge, an 80-seat specialty restaurant, kitchen, a 30-seat bar and a 270-seat coffee shop. This floor would be served by elevators and escalators to the porte cochere on Level 1 and by pedestrian entrances on O'Farrell Street. Level 2 would be elevated 1/2-story above the O'Farrell Street sidewalk and 1-1/2-story above the Ellis Street sidewalk because of the downward slope of Mason and N. 5th Streets.

Level 3 (see Figure 5, p. 19) would contain meeting and banquet areas, totaling about 15,000 gross sq. ft. of meeting and exhibit space and 10,700 gross sq. ft. circulation and storage space. This floor would be the uppermost public use floor of the base building. The banquet area of Level 3 would be 2 stories in height with a curved skylight. This skylight would run the full length of the space and would be constructed of bronze tinted, safety tempered, laminated glass. Level 4, the top floor of the base building (see Figure 5, p. 19), would contain mechanical equipment areas in the northern-half. The high-ceilinged banquet area of Level 3 extends up into the southern-half of Level 4.

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*A porte cochere is a passageway through a building designed to let vehicles pass from the street to a sheltered area for those getting in or out of vehicles.

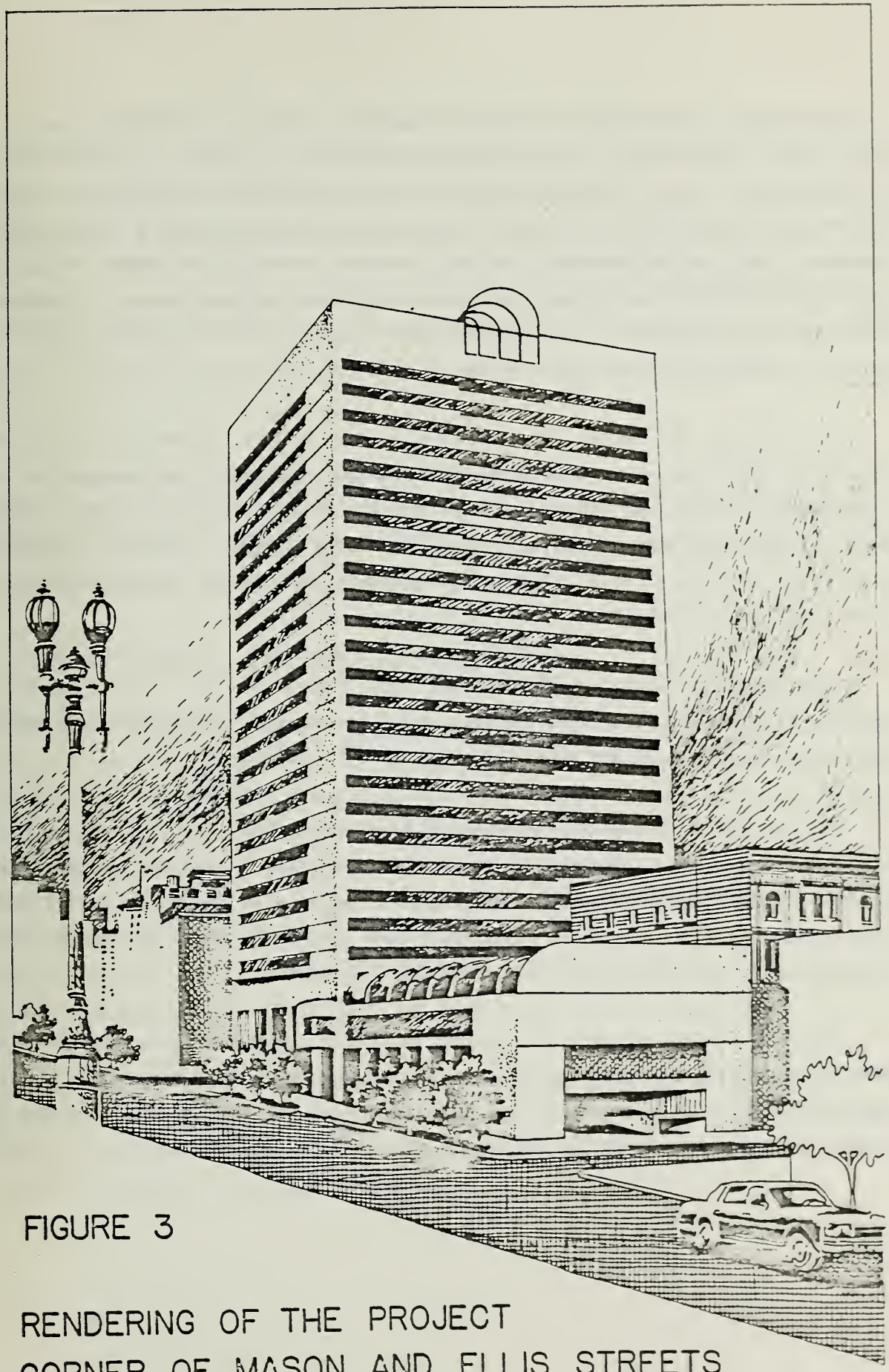


FIGURE 3

RENDERING OF THE PROJECT
– CORNER OF MASON AND ELLIS STREETS

SOURCE: GENSLER & ASSOCIATES, ARCHITECTS

The guest tower would consist of Levels 5 thru 27 with 35 rooms per floor, for a total of 805 guest rooms (see Figure 6, p. 20). The tower would be U-shaped and would be massed around the existing 3-story Heine Piano Company Building located midblock along O'Farrell Street. A unified window treatment would be achieved by defining window areas as horizontal bands of tinted glass on the east, west and south elevations of the tower. Elevators would be located against the northern wall of the tower and would limit the amount of window on the northern side.

Two observation decks (see Figures 6 and 7, pp. 20 and 21) would be provided by the project. The lower observation deck would be located on the penthouse mechanical equipment level with access to the 27th floor by 2 stair towers. The upper observatory, located immediately above the lower observatory, would consist of domed glass and would create a visual point-of-interest at the top of the building.

Underground parking for 81 vehicles (see Figures 7 and 8, pp. 21 and 22) would be located on 3 floors (Levels B-1 thru B-3). Mechanical equipment areas would be provided on Level B-2.

The building surface would be tinted glass and precast concrete. An alternative fiberglass reinforced concrete material would be considered if a cost benefit study indicates a savings by use of this material. Deciduous trees would be located along the perimeter sidewalk area to match those presently on the northern sidewalk of O'Farrell Street.

The total height of the tower would be 300 ft. measured from mid-block on Mason Street to the roof of the upper mechanical floor; the maximum plan dimensions for that portion of the building over 150 ft. in height would be 132 ft. in length and 190 ft. diagonally.

The Holiday Inn project would be eligible for development bonuses under the provisions of Ordinance 240-80 of the Board of Supervisors because the First Administrative Draft EIR was filed 17 August 1979. Bonuses are calculated as a percentage of the gross allowable floor area up to a specified maximum percent. The project sponsors have applied for bonuses for proximity to BART, on-site parking, multiple building entrances, sidewalk widening, shortened walking distances, low coverage at upper floors, and observation decks. The basis for project bonuses is further discussed in Section IV.A, p. 66.

Typical floor plans are shown in Figures 4 thru 7, pp. 18 through 21. Project elevations are shown in Figure 8, p. 22. Building sections are shown on Figure 9, p. 23. Table 1, p. 17, indicates proposed gross floor areas of the base building, guest tower, and parking areas.

D. PROJECT SCHEDULE, REQUIRED ACTIONS, AND COSTS

Design for the proposed project is scheduled by the sponsors for completion by early 1981, subject to approval by the Planning Commission after certification of the EIR. Applications for demolition and building permits will be submitted to various City departments before certification of the EIR. Certification of the Final EIR is expected to be completed in early 1981. The Planning Commission would then undertake Discretionary Review to evaluate the appropriateness and design of the project and would rule to approve, approve with conditions, or disapprove the project. Project disapproval is appealable to the Board of Permit Appeals within 10 days.

Excavation would begin immediately after issuance of permits, followed by construction of the project. Table 2, p. 17, indicates a tentative schedule for major construction activities. The cost of construction is estimated to be $40.5 million in 1980 dollars./2/

NOTES - Project Description

/1/City and County of San Francisco, City Planning Code, September 1979, Section 204 and 210.

/2/Cahill Construction Company, Project Manager, William Cahill, telephone communication, 4 September 1980.

TABLE 1: PROPOSED BUILDING AREAS

Building Area	Gross Floor Area (Sq. Ft.)*
Base Building	
Level 1	13,200
Level 2	25,700
Level 3	24,100
Level 4 Mechanical	15,100
Guest Tower	
Level 5-27 (23 typical floors)	346,700
P-1 Lower Observation	1,700
P-2 Upper Observation	900
Parking Levels	
B-1	13,200
B-2	22,000
B-3	13,200
Total Gross Floor Area	475,800

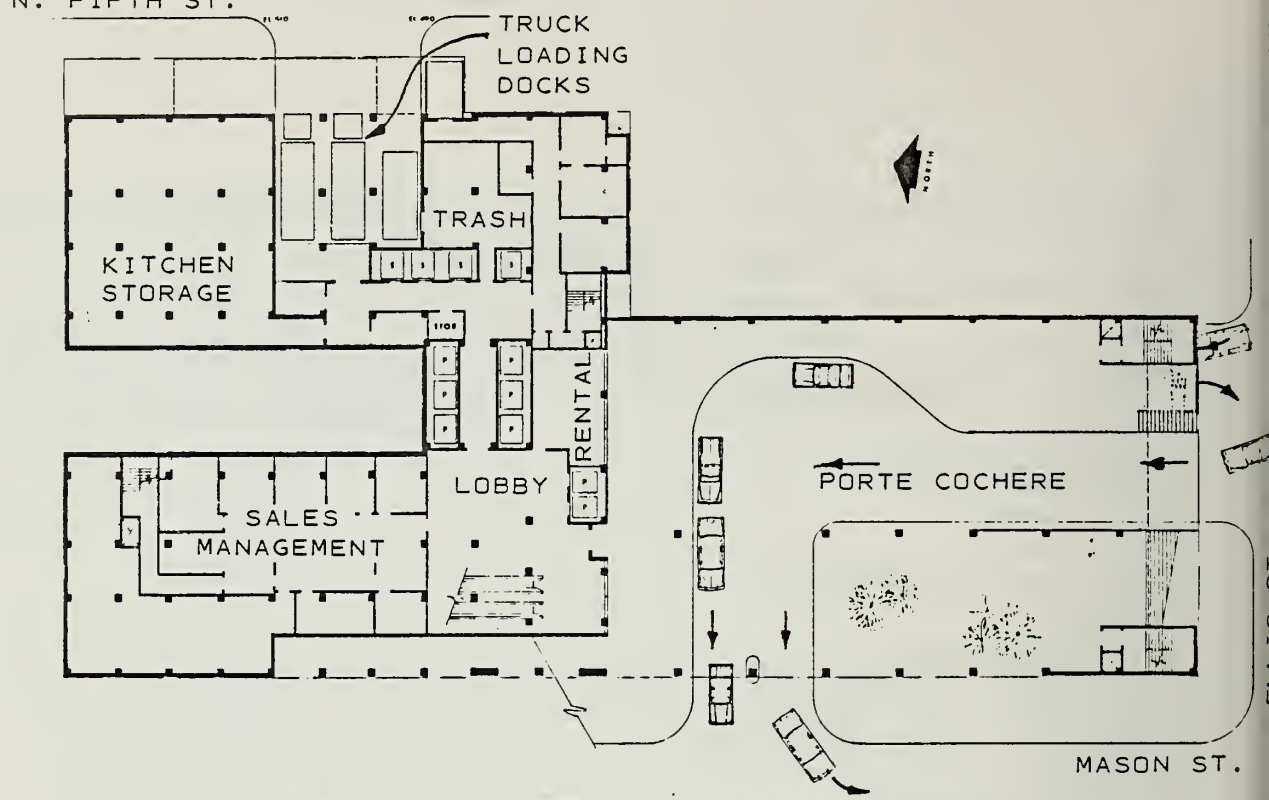
*Gross floor area as defined by Section 102.8(a) of the City Planning Code. Areas have been rounded to the nearest 100 sq. ft.

Source: Gensler and Associates, 1 September 1980.

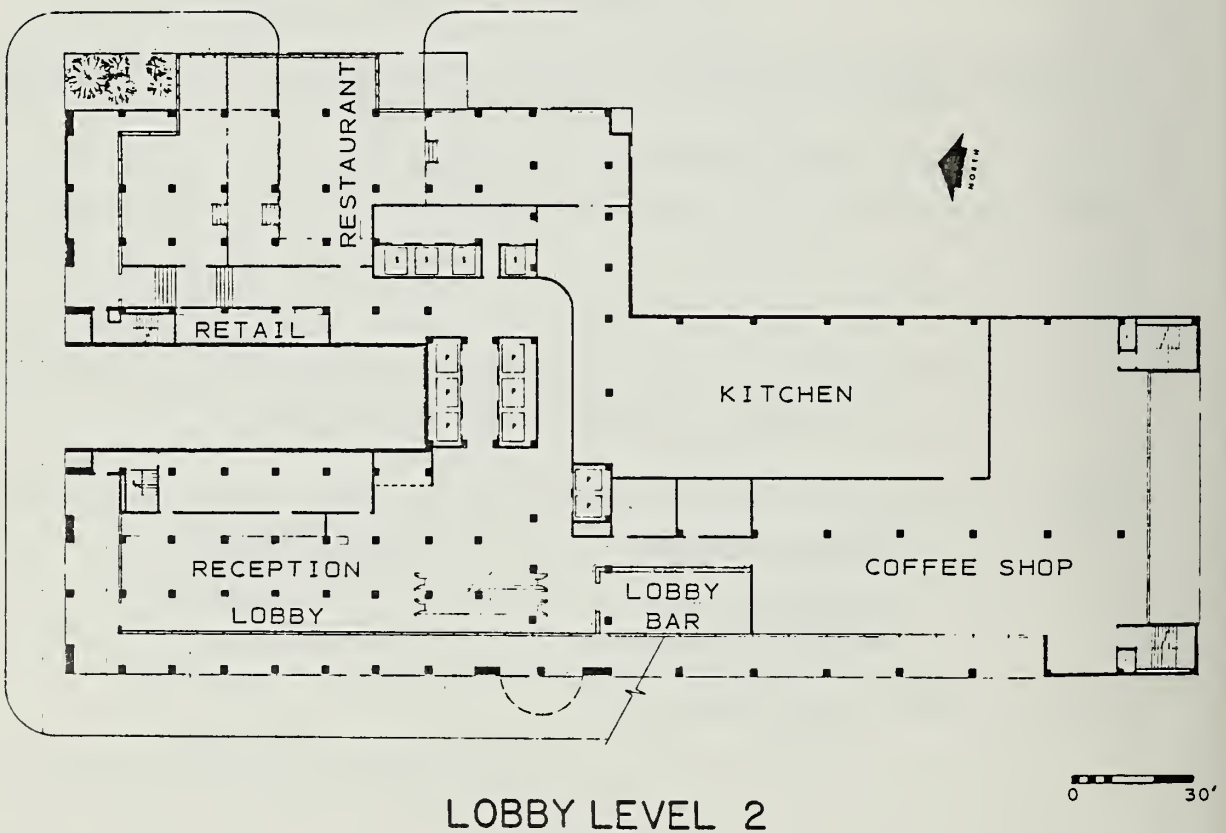
TABLE 2: SCHEDULE OF CONSTRUCTION

Building Activity	Approx. Duration
Excavation	2 months
Building Construction	19-22 months

Source: Cahill Construction Co.



MOTOR ENTRANCE LEVEL 1

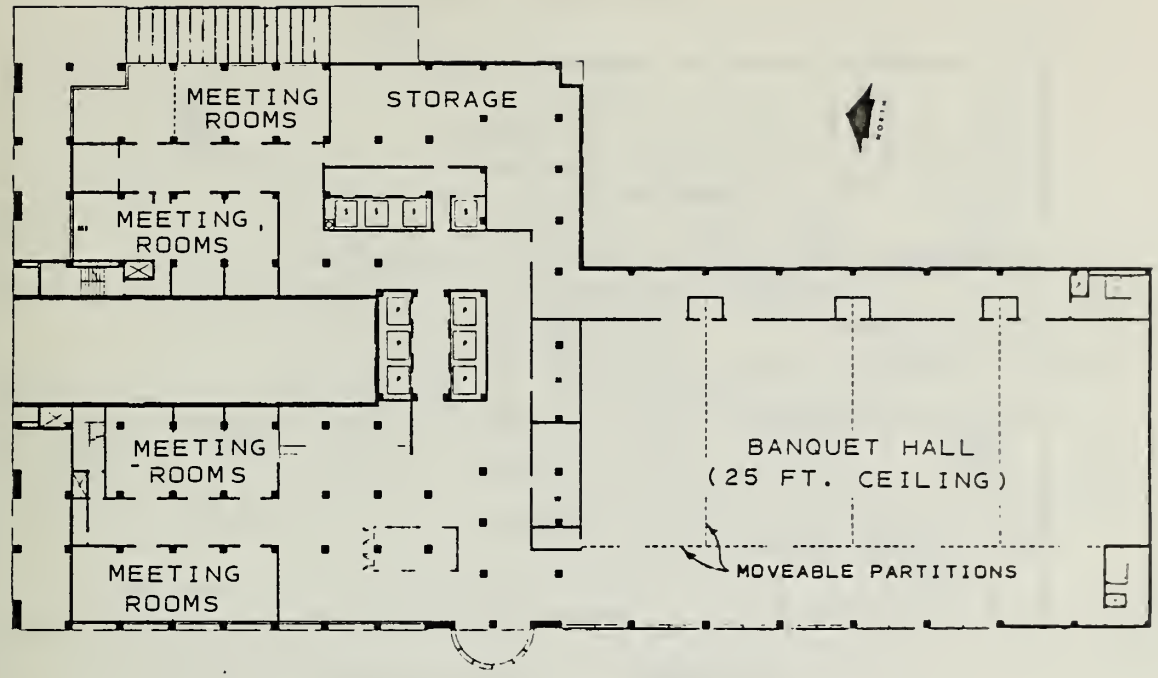


LOBBY LEVEL 2

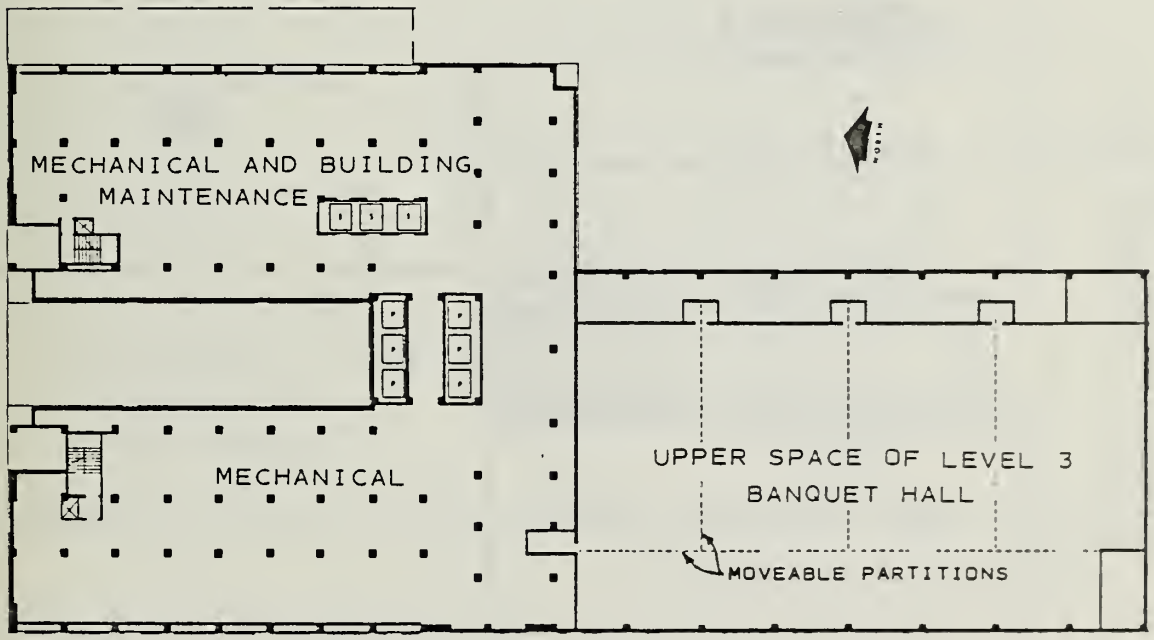
FIGURE 4

LEVEL 1 & 2 FLOOR PLANS

SOURCE: WILLIAM TABLER ASSOCIATES, ARCHITECTS



BANQUET AND MEETING ROOM LEVEL 3



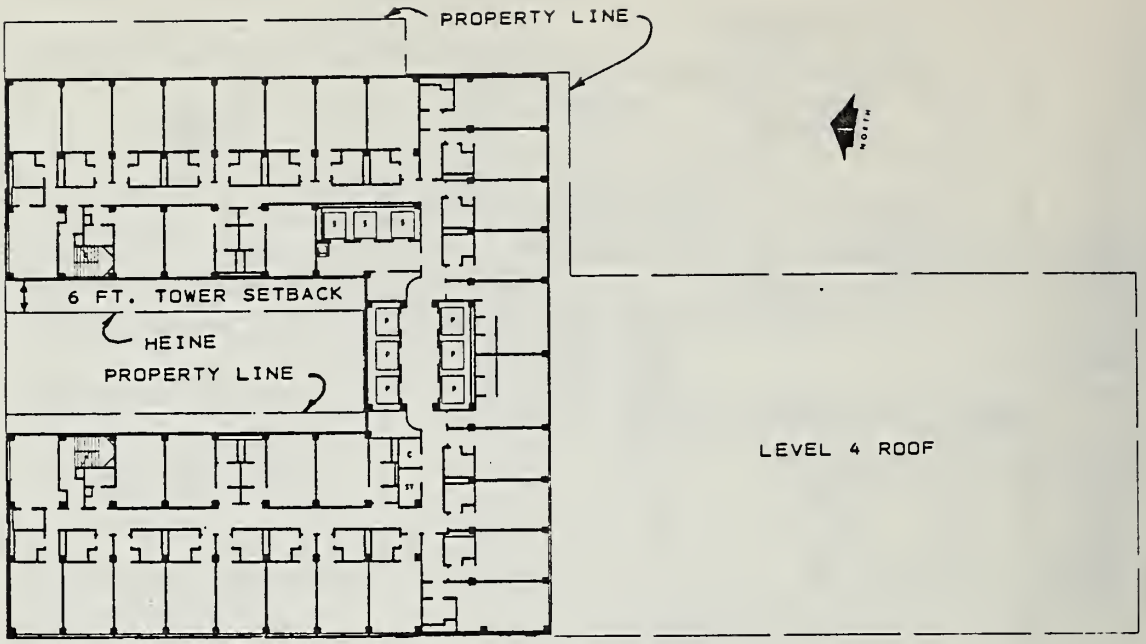
MECHANICAL AND UPPER BANQUET LEVEL 4

0 30'

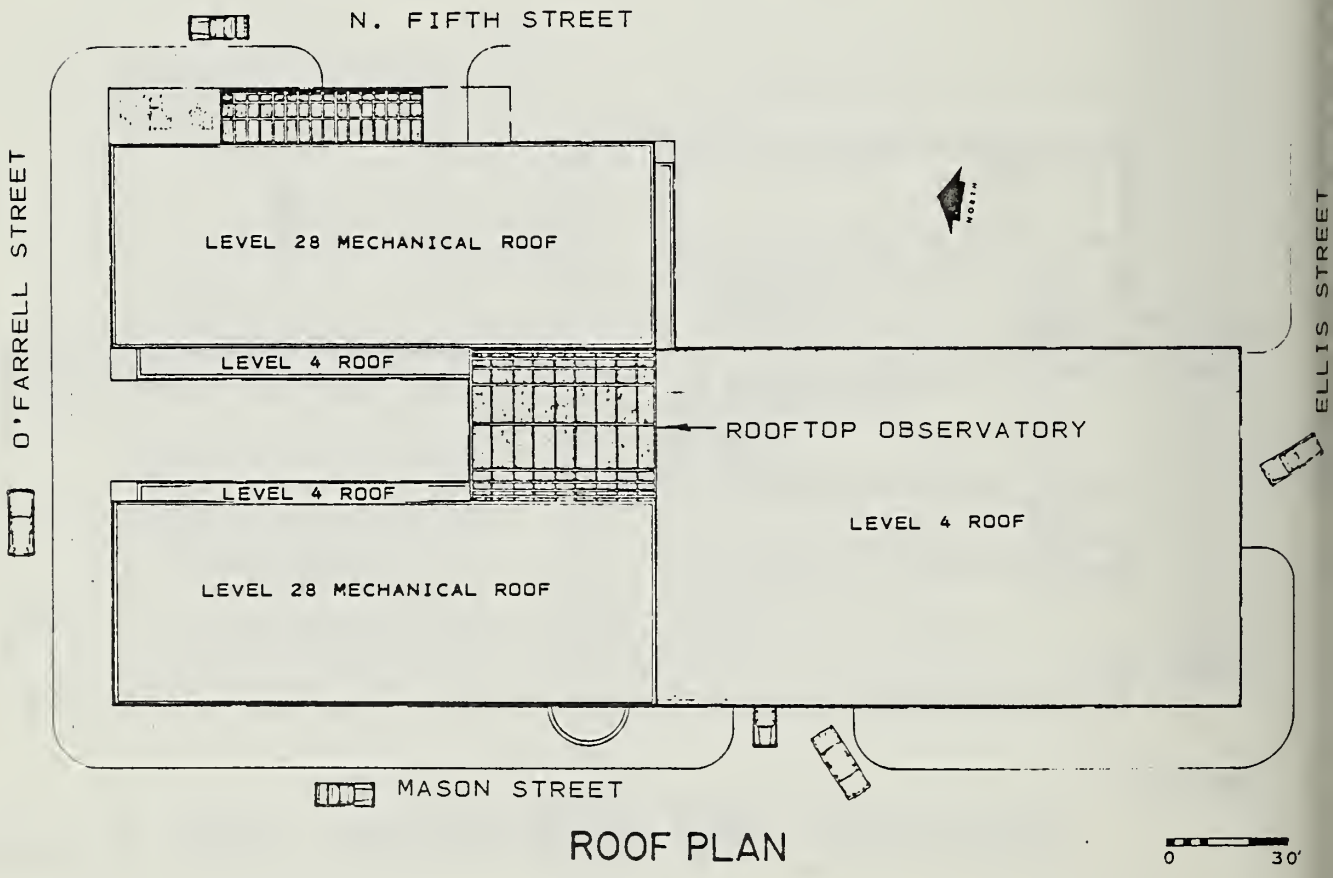
FIGURE 5

LEVEL 3 & 4 FLOOR PLANS

SOURCE: WILLIAM TABLER ASSOCIATES, ARCHITECTS



TYPICAL FLOOR PLAN 5 TO 27

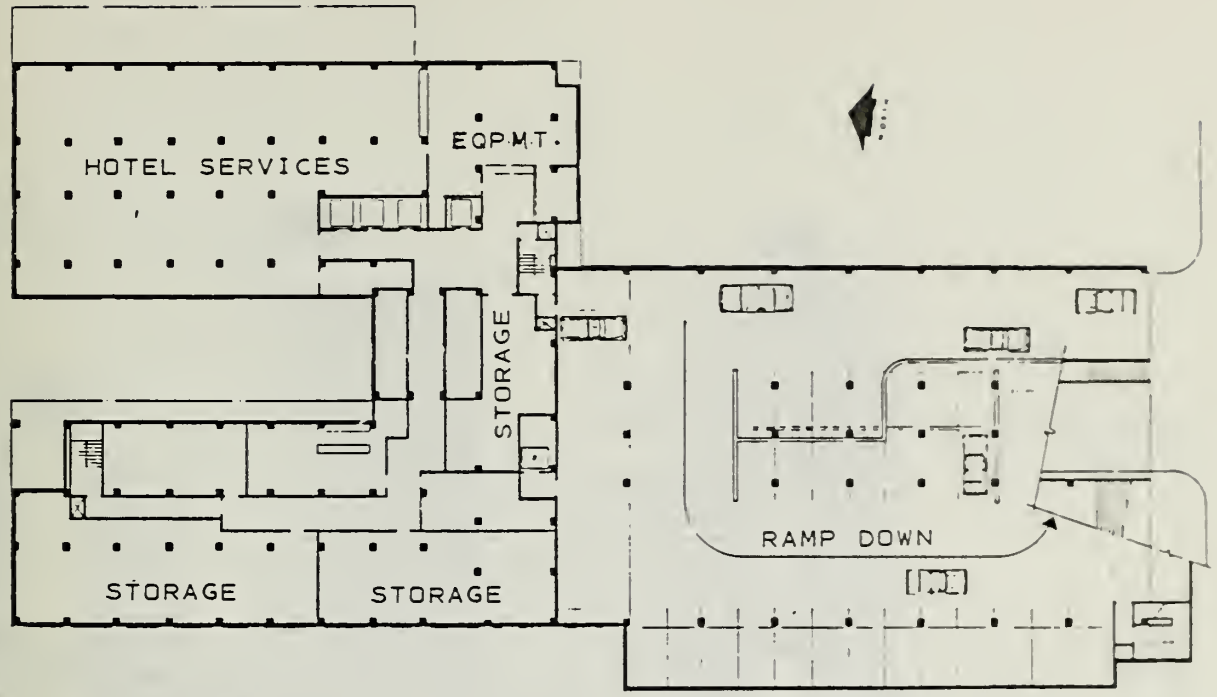


ROOF PLAN

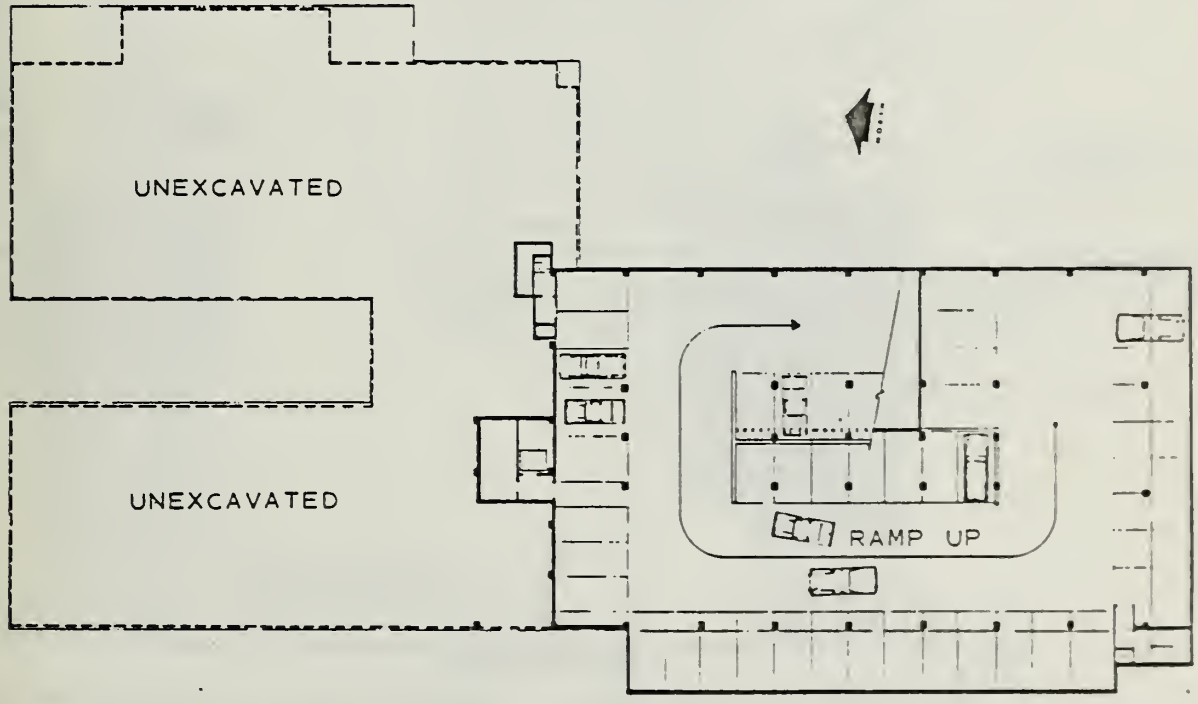
FIGURE 6

LEVEL 5 THRU 27 & ROOFTOP PLANS

SOURCE: WILLIAM TABLER ASSOCIATES, ARCHITECTS



SERVICE AND PARKING LEVEL B-1



PARKING LEVEL

0 30'

FIGURE 7

BASEMENT PARKING LEVEL B-1 & B-2 FLOOR PLANS

SOURCE: WILLIAM TABLER ASSOCIATES, ARCHITECTS

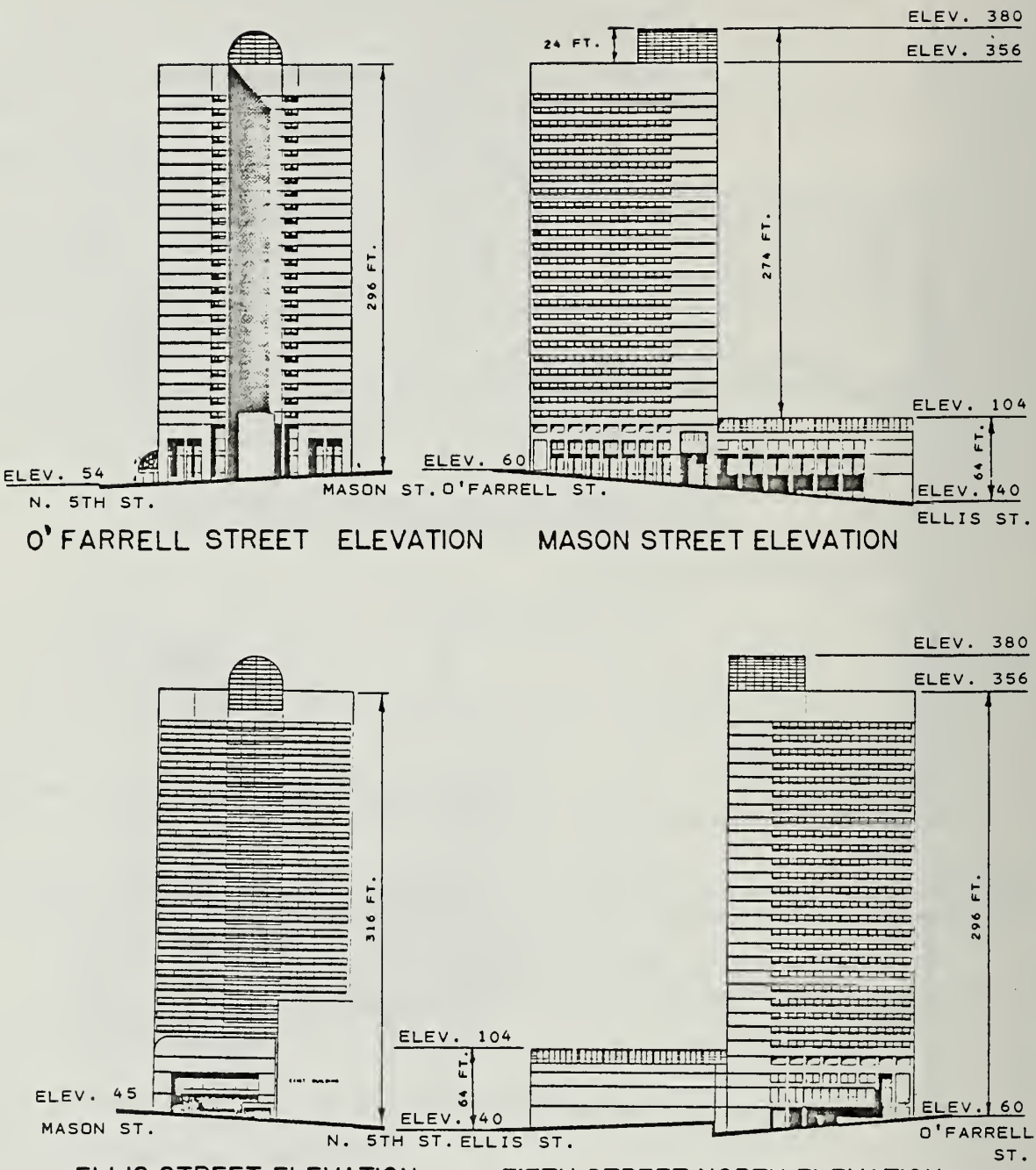


FIGURE 8

ELEVATIONS OF THE PROPOSED PROJECT

SOURCE: WILLIAM TABLER ASSOCIATES, ARCHITECTS

NOTE:
SHADOWS DEPICTED ARE NOT REPRESENTATIVE OF THE ACTUAL SHADOWS WHICH WOULD OCCUR. THESE SHADOWS HAVE BEEN PROVIDED TO EMPHASIZE THE RELIEF OF THE ELEVATIONS.

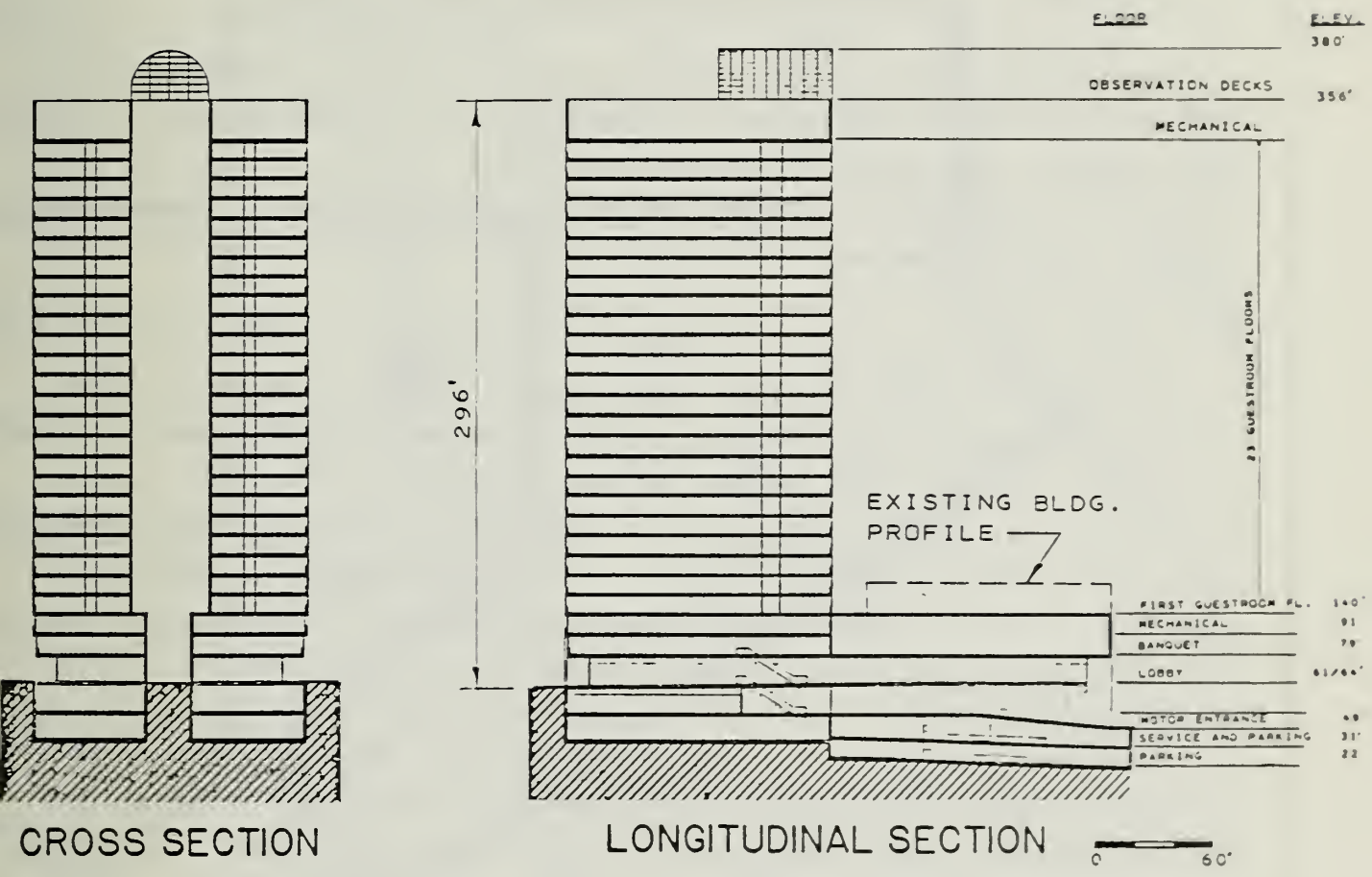


FIGURE 9

SECTIONS OF THE PROPOSED PROJECT

SOURCE: WILLIAM TABLER ASSOCIATES, ARCHITECTS

III: ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

LAND USE

The project site is located in the northeastern portion of San Francisco's Tenderloin District./1/ Neighboring the Tenderloin District to the north and east is San Francisco's main retail district, a regional and local hub of commercial businesses and activity. Figure 10, p. 25, depicts the primary study area which is bounded by Sutter, Kearny, 3rd, Mission, 6th and Taylor Streets.

The project site is located on the western portion of Assessor's Block 326, which is bounded by O'Farrell, Mason, Ellis and N. 5th Streets (shown in Figure 2, p. 11). The western portion of Assessor's Block 326 contains 6 lots, of which 3 comprise the project site: Lots 11, 12, and 20. Fairway Rent-a-Car operates from Lot 11 and is the only commercial establishment operating on site. Fairway also has a parking business on Lots 11, 12, and 20. Lots 10 and 13, located adjacent to the site, are occupied by building structures which include the 7-story Maria Manor Hotel (federally-subsidized senior citizen housing) and the 3-story Heine Piano Company Building, respectively. Dahl's Antiques leases the 1st floor of the Heine Building, and the Heine Piano Company occupies the 2nd and 3rd stories. Both are retail businesses. Amy's Liquors and Deli is located in the southeast corner of the Maria Manor Hotel at street level.

Figure 11, p. 26, illustrates the existing land use patterns in the study area; commercial uses dominate the area east of Powell Street and south of Market Street, and hotel and automobile parking uses are concentrated west of Powell Street and north of Market Street. There are 2 open space areas in the study area: Union Square, a tourist attraction, and Halladie Plaza, the location of the San Francisco Visitor Information Center and the entry to the Powell St. BART and Muni-Metro stations. As a result of the location of these

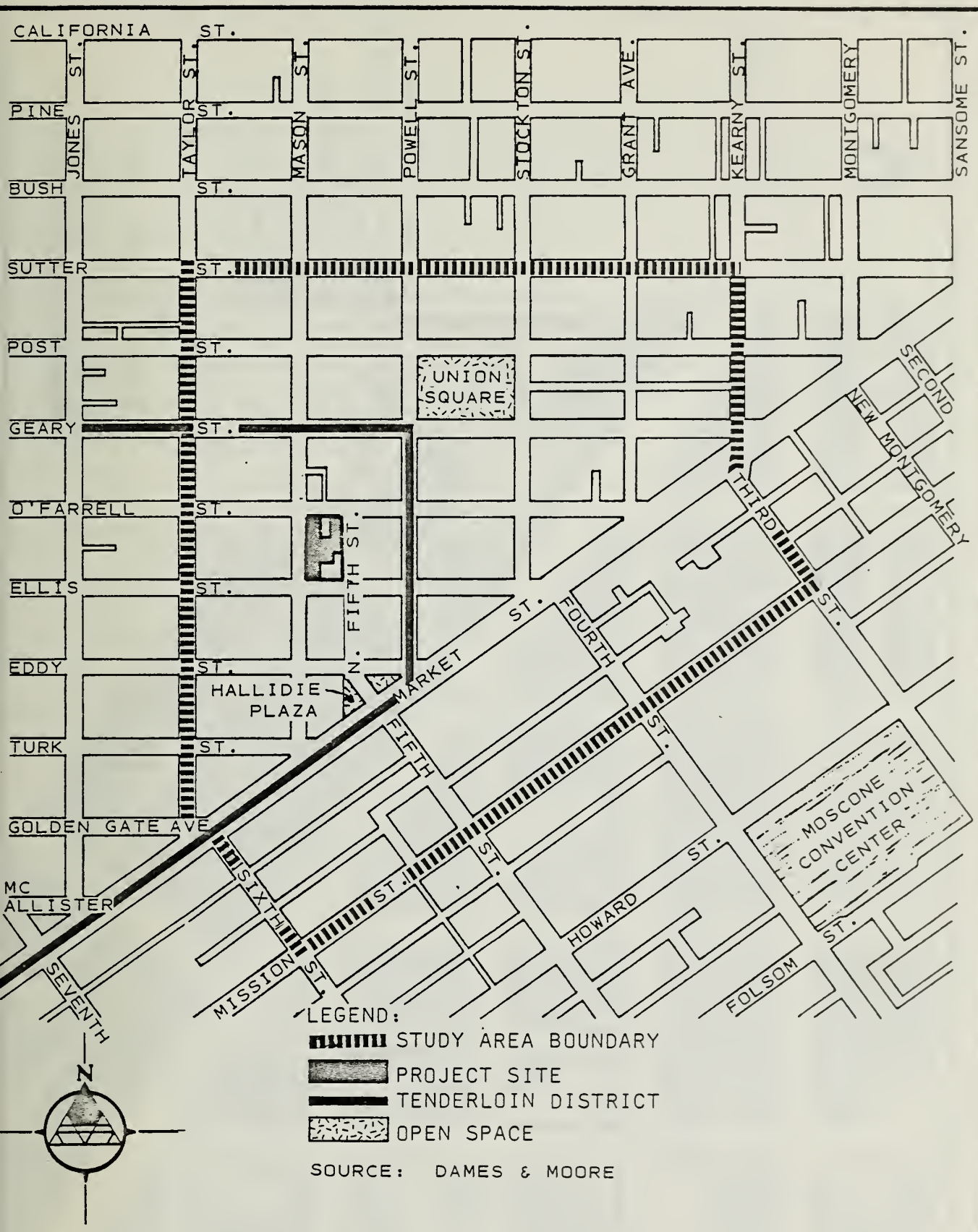


FIGURE 10

LOCATION OF STUDY AREA

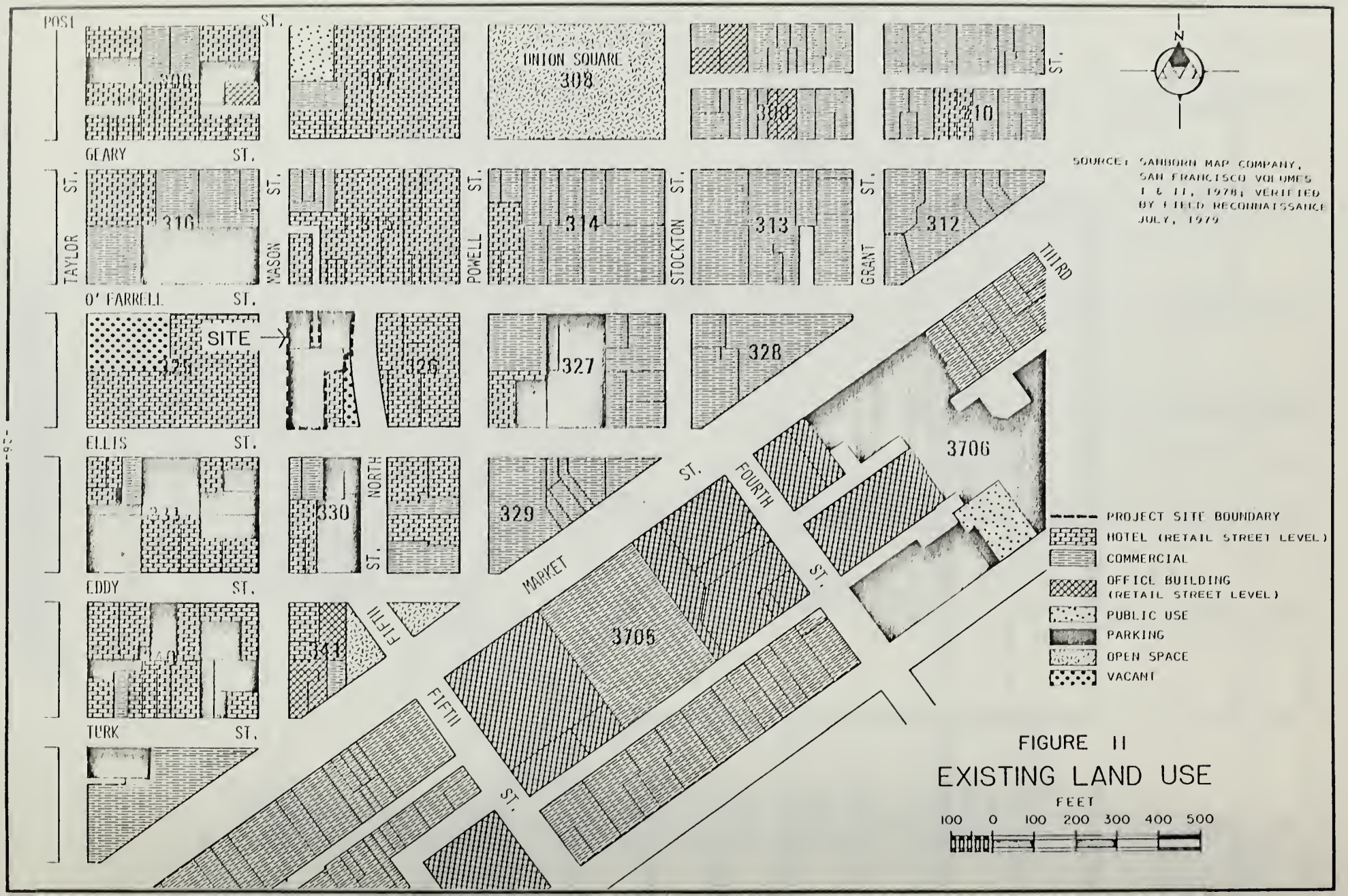


FIGURE 11

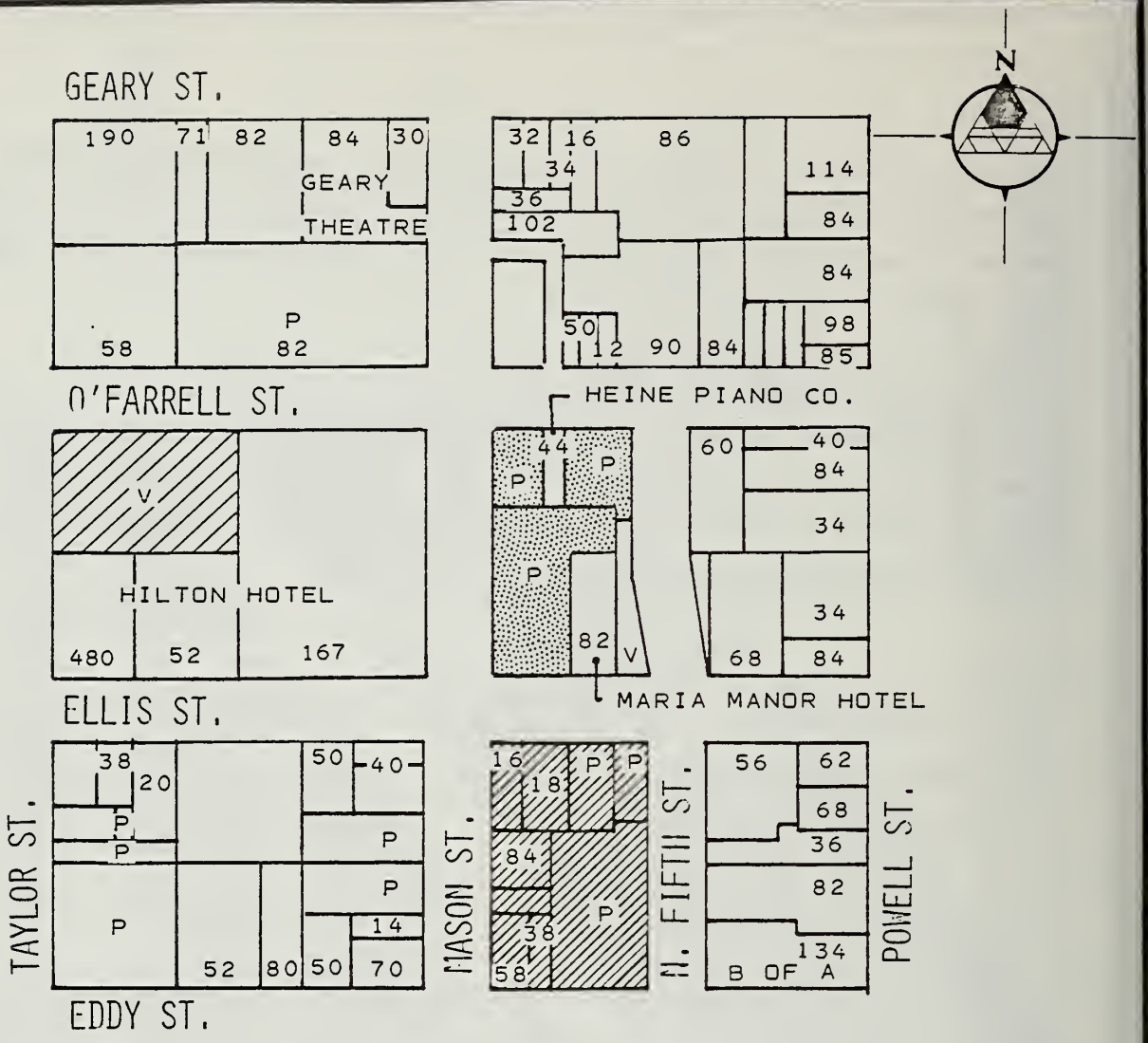
EXISTING LAND USE

and other attractions, e.g., the Powell Street cable car lines and the concentration of hotels and retail outlets, the study area is one of the most congested pedestrian centers in the City, particularly in the vicinity of Union Square.

Existing structures within the study area generally range from 1-17 stories in height, as shown in Figures 12 and 13, pp. 28 and 29. Three modern highrise structures within the study area (ranging from 27-35 stories) dominate the visual background as viewed from ground level within the Tenderloin District. These structures include the following:

Building	Number of Stories	Location	Blocks From the Project Site
Hilton Hotel Tower	27	Mason & O'Farrell	1/2 block west
Hyatt on Union Square	35	Stockton & Post	3 1/2 blocks northeast
St. Francis Hotel Tower	33	Powell & Geary	1 block north

Land uses along the street frontages facing the project site are characteristic of a transition zone between San Francisco's Retail and Tenderloin districts. Developments typical of the Retail District (such as retail shops, theatres, transient hotels and tourist-oriented businesses) are concentrated in the northern portion of the study area. Businesses typical of the Tenderloin (such as massage parlors, topless bars, adult entertainment facilities, restaurants, and cocktail lounges) are found from O'Farrell Street southward to Market Street. Retail stores, personal service establishments, residential hotels primarily occupied by low-income or elderly residents, and neighborhood-oriented businesses are found in the Tenderloin area.



LEGEND:

- PROPOSED HOLIDAY INN (300 FT.)
- PROPOSED HILTON TOWER NO.2 (320 FT.)
- PROPOSED HOTEL RAMADA (320 FT. MAX.)

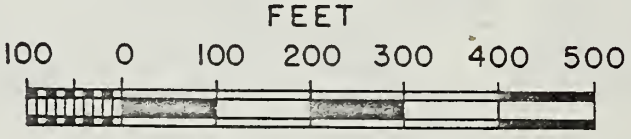
P - PARKING
V - VACANT

FIGURE 12

EXISTING BUILDING HEIGHTS

(NUMBERS INDICATE BUILDING HEIGHTS IN FEET)

SOURCE: SANBORN MAP COMPANY, SAN FRANCISCO VOLUMES I & II, 1978; VERIFIED BY FIELD RECONNAISSANCE AUGUST 1980.



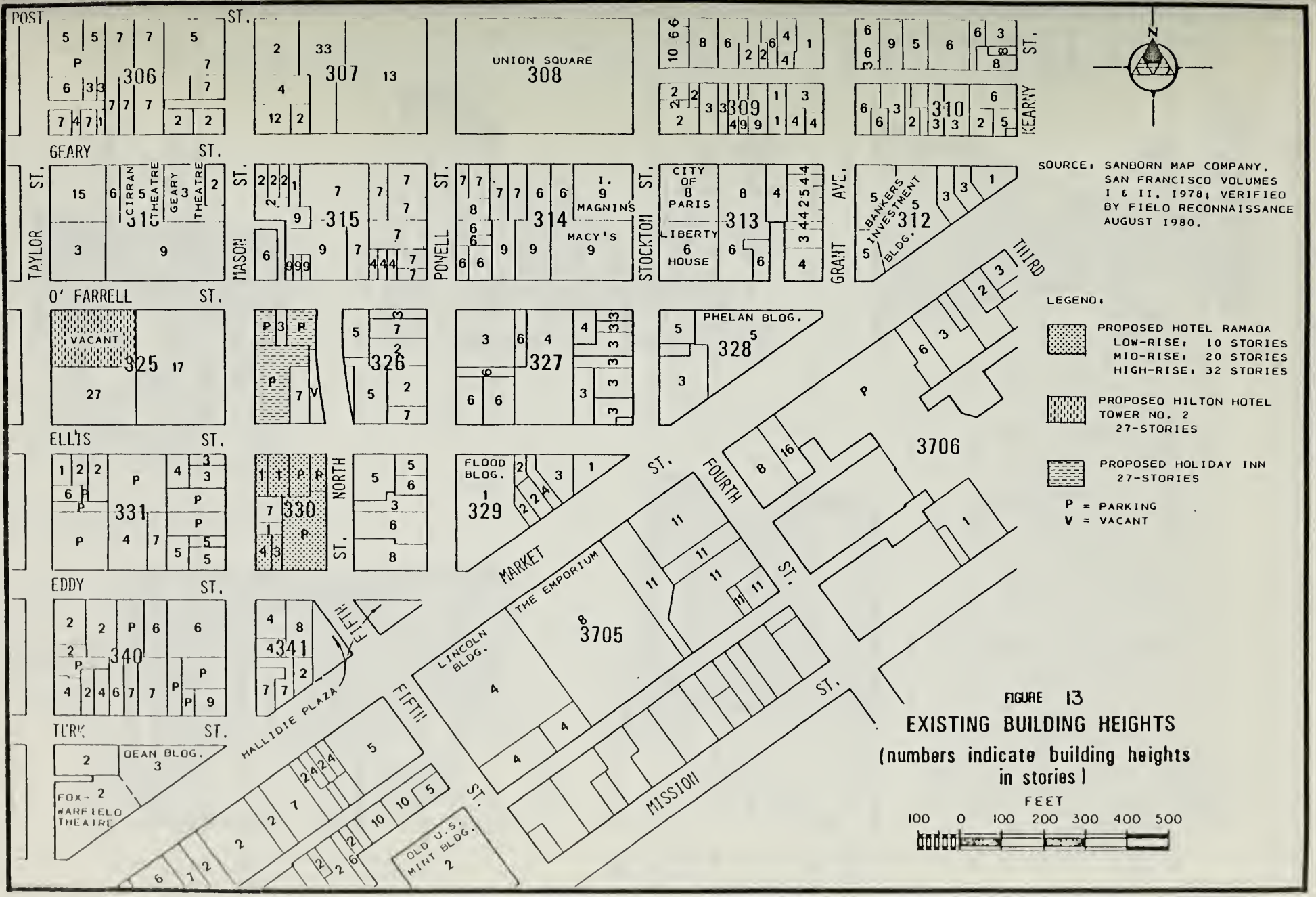


FIGURE 13

EXISTING BUILDING HEIGHTS

(numbers indicate building heights in stories)

Facing the site are the Hilton Hotel to the west on Assessor's Block 325 and, to the north, the Handlery Motor Inn on Assessor's Block 315. Automobile parking is located at the corner of Mason and O'Farrell Streets on Block 316 to the northwest. Other street level retail and commercial outlets on Block 315 include a restaurant, massage parlor, liquor store and topless bar. The Gates Hotel (approximately 2/3 residential), the Barclay Hotel (100% residential) and Bardelli Restaurant occupy the frontage of the eastern half of Block 326 on N. 5th Street. Two of the 5 street level retail outlets associated with the Gates Hotel building are currently vacant. Southeast of the site the Continental Hotel is located on the northwestern corner of Assessor's Block 330 at N. 5th Street and contains a grocery store, barber shop and a liquor and jewelry store at the street level. Automobile parking and adult entertainment businesses are situated on the northern frontage of the western portion of Block 330. In February 1980, a fire gutted interiors of commercial businesses on Block 330 along Ellis Street. These structures are proposed to be demolished for construction of a 1000-room Ramada Inn within Assessor's Block 330. Ron's Coffee and a parking lot are located southwest of the project site on the corner of Block 331 (see Figure 14, pp. 31 and 32).

ZONING

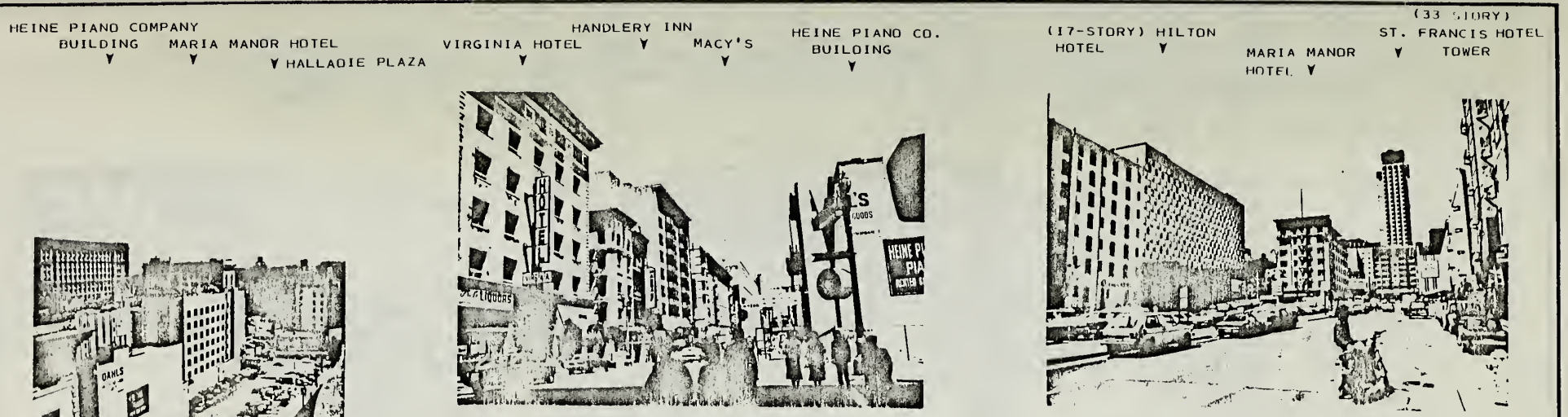
The City Planning Code/2/ zone classification for the project site is C-3-G as shown in Figure 15, p. 33. Principal uses allowed in the zoning classification include "downtown general commercial and dwelling uses."

The site is located in a 320-I Planning Code Height and Bulk District as presented in Figure 16, p. 34.

NOTES - Land Use & Zoning

/1/San Francisco Study Center, December, 1978. "Working Papers on San Francisco's Tenderloin" prepared for the North of Market Planning Coalition, San Francisco, CA.

/2/City and County of San Francisco, City Planning Code, September 1979, Sections 204 and 210.



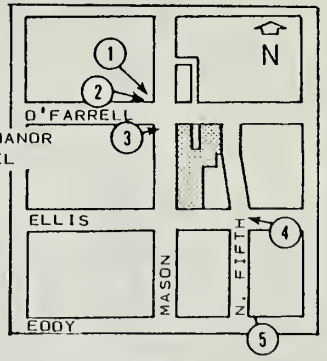
(1) VIEW FROM ROOFTOP OF 325 MASON ST. PARKING GARAGE LOOKING SOUTHEAST TOWARDS MARKET ST. & HALLADIE PLAZA

(3) VIEW FROM SIDEWALK AT CORNER OF MASON & O'FARRELL STREETS LOOKING EAST ALONG O'FARRELL STREET

(5) VIEW FROM SIDEWALK FROM HALLADIE PLAZA AT CORNER OF EDDY & N. FIFTH STS. LOOKING NORTH

(2) VIEW FROM ROOFTOP OF 325 MASON ST. PARKING GARAGE LOOKING EAST ALONG N. FIFTH STREET

(4) VIEW FROM SIDEWALK AT CORNER OF ELLIS & N. FIFTH STS. LOOKING WEST ALONG ELLIS STREET



LOCATION MAP

FIGURE 14

VIEWS OF THE EXISTING SITE & SURROUNDING AREA

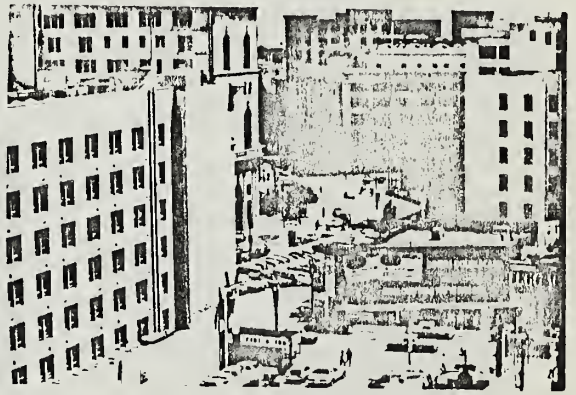
(33-STORY) ST. FRANCIS HOTEL TOWER ▼ HEINE PIANO CO. ▼ (35-STORY) HYATT ON ▼ UNION SQUARE MARIA MANOR ▼ HOTEL

⑥ VIEW FROM SIDEWALK AT CORNER OF ELLIS & MASON STS. LOOKING NORTHEAST TO REAR OF THE HEINE PIANO CO. BLDG.

MARIA MANOR HOTEL ▼ GATES HOTEL ▼

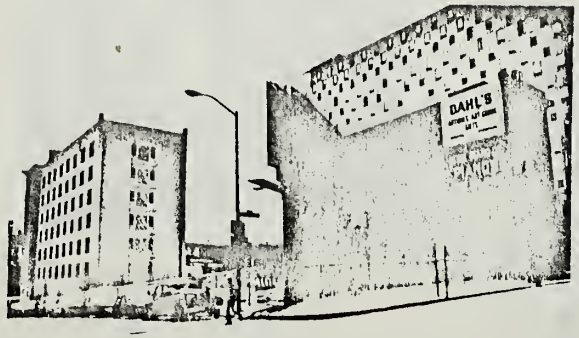
⑦ VIEW FROM SIDEWALK AT CORNER OF ELLIS & MASON STS. LOOKING NORTHEAST & ALONG ELLIS STREET

MARIA MANOR HOTEL ▼ 1 POWELL STREET ▼ HALLADIE PLAZA ▼ OLYMPIC HOTEL ▼



⑧ VIEW FROM ROOFTOP OF 325 MASON ST. PARKING GARAGE TOWAROS MARKET STREET & HALLAOIE PLAZA

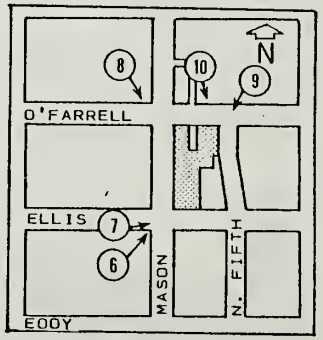
MARIA MANOR HOTEL ▼ (17-STORY) HILTON HOTEL ▼



⑨ VIEW FROM SIDEWALK AT CORNER OF N. FIFTH & O'FARRELL STS. LOOKING SOUTH-WEST AT REAR OF MARIA MANOR HOTEL

BAROELLI RESTAURANT ▼ GATES HOTEL ▼

⑩ VIEW FROM SIDEWALK ON O'FARRELL ST. ACROSS FROM THE HEINE PIANO CO. BLDG. SOUTHEAST ALONG N. FIFTH STREET



LOCATION MAP

FIGURE 14 (CONT.)

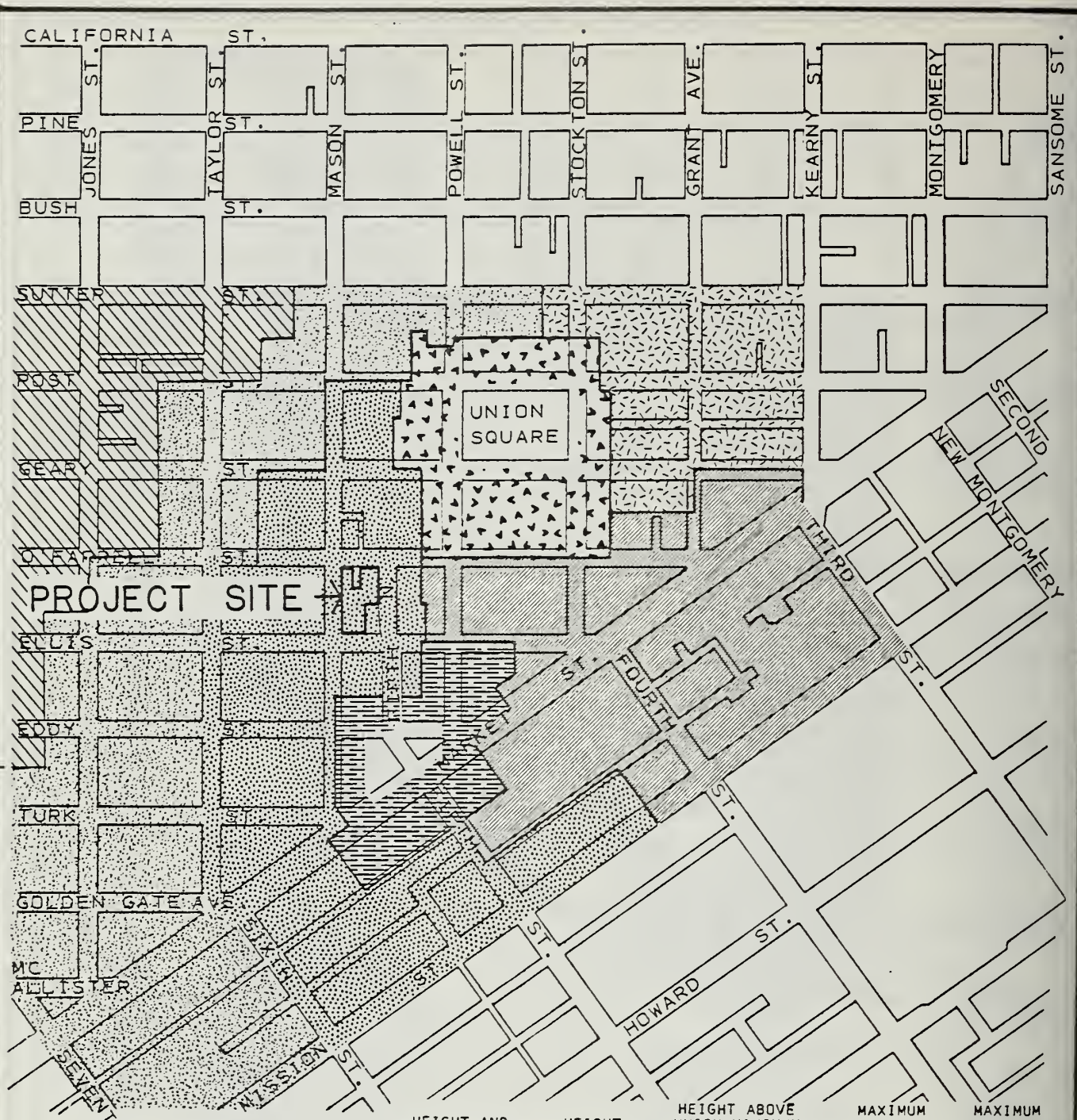
VIEWS OF THE EXISTING SITE & SURROUNDING AREA

FIGURE 15

ZONING MAP

SOURCE: CITY AND COUNTY OF SAN FRANCISCO
PLANNING DEPARTMENT, 1979

FEET
600 0 600 1200



LEGEND:

HEIGHT LIMITS

- 160-G
- 225-I
- 240-H
- OS (OPEN SPACE)
- 160-F
- 320-I
- 360-I
- 400-I

HEIGHT AND BULK DISTRICTS	HEIGHT LIMITS (FT.)	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY (FT.)	MAXIMUM BUILDING LENGTH (FT.)	MAXIMUM DIAGONAL DIMENSION (FT.)
160-F	160	80	110	140
160-G	160	80	170	200
225-I	225	150	170	200
240-H	240	100	170	200
320-I	320	150	170	200
360-I	360	150	170	200
400-I	400	150	170	200
OS (OPEN SPACE)				

FIGURE 16
HEIGHT & BULK DISTRICT MAP

SOURCE: CITY AND COUNTY OF SAN FRANCISCO PLANNING DEPARTMENT, 1979

600 0 FEET 600 1200

B. SOCIAL CHARACTERISTICS

An inventory of residential and transient hotels was conducted by Dames & Moore in July 1979 to identify the permanent and transient resident population of the study area. Information on 23 hotels was obtained from a listing of the "Hotel/Motel Members of the San Francisco Convention and Visitors Bureau - Total Advertised Rooms," dated 21 March 1978. The San Francisco Convention and Visitors Bureau "represents all class A hotels in San Francisco," where class A hotels are defined as having over 5,000 square feet of meeting space, and some other hotels./1/ In addition, a field reconnaissance of the surrounding blocks was made in August 1980 to identify non-member hotels and residential hotels which do not advertise their rooms. Three hotels were identified as "permanent" residential hotels: the Maria Manor Hotel, located adjacent to the project site on Ellis Street; the Barclay Hotel, located across from the site on O'Farrell at N. Fifth Street; and the Hotel Paisley, located at 432 Geary Street. Six hotels were identified in the surrounding blocks that provide both "residential" and "transient" rooms. Table 3 lists the non-member hotels in the surrounding blocks. Residential units total 638 rooms, which represents about 7.5% of the total of 8568 hotel rooms identified

TABLE 3
RESIDENTIAL HOTEL UNITS WITHIN
1 BLOCK OF THE PROJECT SITE

Hotel	Number of Rooms		
	Total	Residential	% Residential
Barclay Hotel	90	90	100.0
Hotel Paisley	68	68	100.0
Maria Manor Hotel	119	119	100.0
Hotel Empress	95	80	84.2
Spaulding Hotel	125	100	80.0
Maryland Hotel	100	80	80.0
Hotel Herbert	105	51	48.6
Powell Hotel	200	40	20.0
Virginia Hotel	120	10	8.3
Total	1022	638	62.4

Source: Dames & Moore, August 1980

in the study area./2/ Figure 17, p. 37, identifies the name, location and number of rooms available for hotels within the study area from the Visitor Bureau's summary.

The Tenderloin area is served by Public Health District #4 located at 1490 Mason Street (north of the study area). This District provides medical services to Chinatown, North Beach, the North of Market Business District and the South of Market areas. Although Tenderloin residents are assigned to this center for health needs by the City's Health Department, many use the limited services at the public health center at Pierce and Ellis Streets due to its proximity in the Tenderloin./3/ Central Emergency, located at 50 Ivy Street, is the emergency aid station for the Tenderloin District. San Francisco General, located at 1001 Potrero Street, serves as a back-up hospital.

The Tenderloin area does not contain a city-run recreational center. The North of Market area has been designated by the City/4/ as a "highest priority area" for development of a multi-use community center, to be funded by federal Community Development grants. Under the Rehabilitation Assistance Program (RAP), $500,000 has been allocated to the Tenderloin for community improvements by the City of San Francisco. The City is currently meeting with the North of Market Planning Coalition to determine the needs of the Tenderloin District.

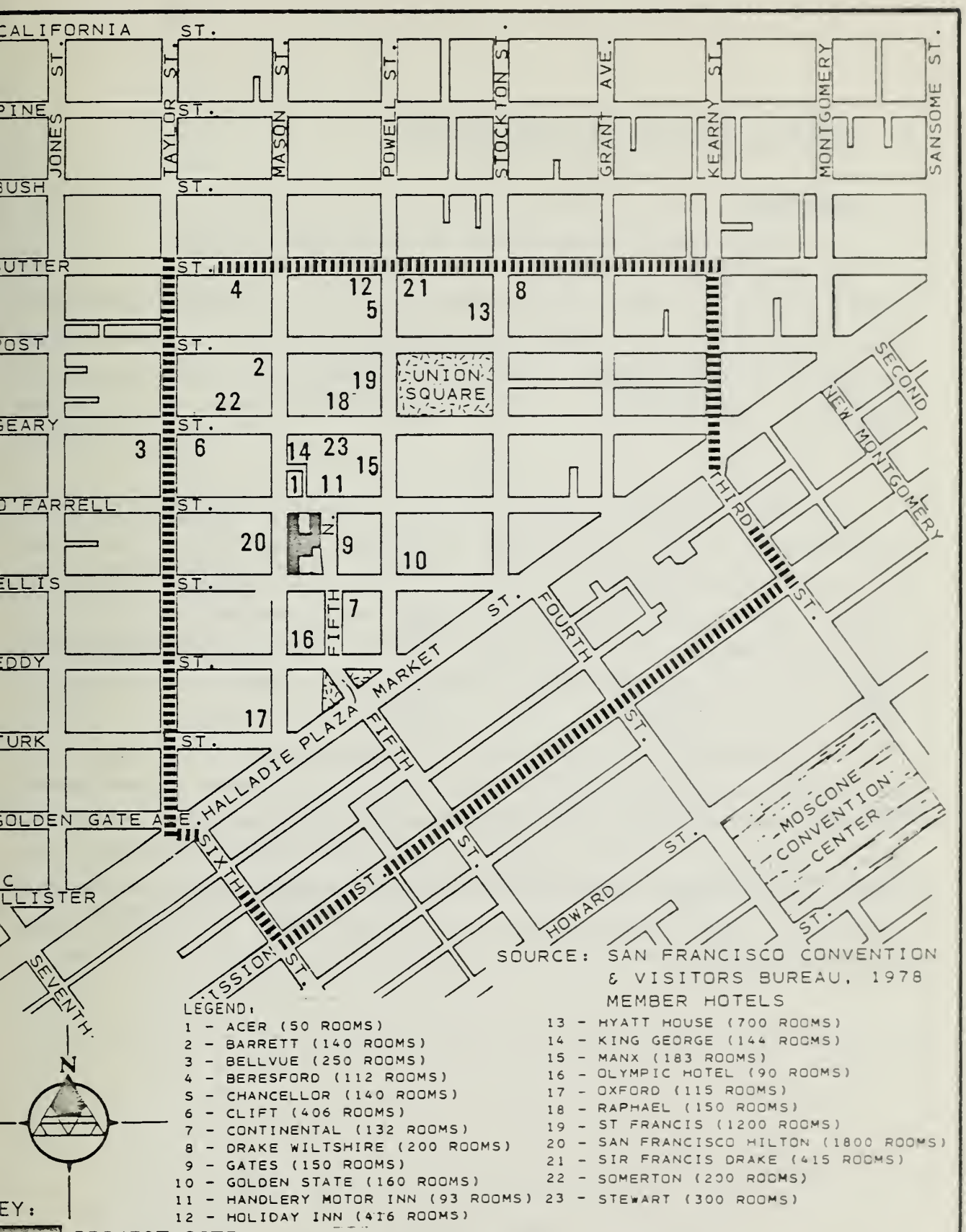
NOTES - Social Characteristics

/1/San Francisco Convention and Visitors Bureau, Mike McGowan, Membership Director, personal communication, 22 October, 1980.

/2/Total advertised rooms for hotel/motel members of the San Francisco Convention and Visitors Bureau, as of 21 March 1978, was 18,574 rooms. Total rooms advertised in the study area represent 41% (7546 rooms) of the total available rooms in San Francisco.

/3/San Francisco Study Center, December 1978. "Working Papers on San Francisco's Tenderloin," prepared for the North of Market Planning Coalition, San Francisco, CA.

/4/Department of City Planning, 23 August 1977, letter to Mr. Roger Boas, Chief Administrative Officer, re: Recommendations on the Designation of the Tenderloin as a Rehabilitation Assistance Program (RAP) Area.



SOURCE: SAN FRANCISCO CONVENTION & VISITORS BUREAU, 1978

LEGEND:

MEMBER HOTELS

1 - ACER (50 ROOMS)
2 - BARRETT (140 ROOMS)
3 - BELLVUE (250 ROOMS)
4 - BERESFORD (112 ROOMS)
5 - CHANCELLOR (140 ROOMS)
6 - CLIFT (406 ROOMS)
7 - CONTINENTAL (132 ROOMS)
8 - DRAKE WILTSHIRE (200 ROOMS)
9 - GATES (150 ROOMS)
10 - GOLDEN STATE (160 ROOMS)
11 - HANDLERY MOTOR INN (93 ROOMS)
12 - HOLIDAY INN (416 ROOMS)
13 - HYATT HOUSE (700 ROOMS)
14 - KING GEORGE (144 ROOMS)
15 - MANX (183 ROOMS)
16 - OLYMPIC HOTEL (90 ROOMS)
17 - OXFORD (115 ROOMS)
18 - RAPHAEL (150 ROOMS)
19 - ST FRANCIS (1200 ROOMS)
20 - SAN FRANCISCO HILTON (1800 ROOMS)
21 - SIR FRANCIS DRAKE (415 ROOMS)
22 - SOMERTON (200 ROOMS)
23 - STEWART (300 ROOMS)

EY:
PROJECT SITE

600 0 600 1200

FIGURE 17

LOCATION OF EXISTING HOTELS IN THE STUDY AREA

C. ECONOMIC, EMPLOYMENT AND FISCAL FACTORS

ECONOMICS

The project site is currently used to provide 30,100 gross sq. ft. of surface parking. Fairway Rent-a-Car operates from Lot 11 and is the only commercial establishment currently operating on site. Total employment on the western portion of Assessor's Block 326 is 22 employees. Eight people are employed by the parking lot and Fairway Rent-a-Car business located on the project site./1/

The 1979-80 assessed valuation for tax purposes of Lots 11, 12 and 20 (the project site) is $703,000, which is comprised of $687,000 in land value, and $16,000 in improvements./2/ At the 1979-80 total (composite) tax rate of $4.97 per $100 assessed valuation, the project site generated about $35,000 in property tax revenues last fiscal year. Of this amount, approximately 30,000 (85%) will accrue to the City and County of San Francisco (see Table 4).

The existing 30,100 gross sq. ft. of parking space on the project site are expected to generate about $7,000 in sales tax revenue at the current tax rate of 6.5% for the City of San Francisco./3/ The costs of City and County services to the site including police and fire protection, street lighting and cleaning, and other public work services cannot be reliably quantified. Costs of these services are not identifiable on a per development or per unit basis./4/

TABLE 4: DISTRIBUTION OF 1979-80 PROPERTY TAXES LEVIED ON BLOCK 326, LOT NOS. 11, 12 and 20

	1979-80 Total Composite Tax Rate /a/	Revenues /b/	Percent
City and County of San Francisco	4.219	$ 29,800	85.0
San Francisco Unified School District	0.344	2,500	7.0
San Francisco Community College District	0.058	400	1.1
Bay Area Air Quality Management District	0.008	0	0.1
BART	0.341	2,400	6.8
TOTAL	$4.97	$ 35,100	100

/a/ Tax rate is levied per $100 of assessed value. Composite tax rate 1980-81 remains to be determined.

/b/ Revenues are rounded to nearest $100; based on total 1979-80 assessed valuation of $703,000.

SOURCE: City and County of San Francisco, Tax Collector, phone conversation, 13 August 1980.

SAN FRANCISCO HOTEL AND TOURIST INDUSTRY

San Francisco's evolution into a financial, government, and services center has led to changes in land use and development patterns which have included the following:

- An intensification of office space and associated retailing and services which has occurred since the end of World War II.

- The historic Financial District has been reinforced due to private and public redevelopment activities.

- Centers of tourism have become more identifiable in Downtown San Francisco and the Fisherman's Wharf area./4/

Growth in San Francisco's office market and tourism has increased demand for the existing hotel rooms in the City./5/ The San Francisco Convention and Visitors Bureau reports for the years 1965-1979 indicate about 39,400,000 visitors during that time span. The most recent estimate on a 1-year basis for 1979 shows about 3,520,000 visitors remaining overnight or approximately a 10% increase over 1978 visitors, which totalled about 3,200,000 persons. The San Francisco Convention and Visitors Bureau/6/ estimated that the total visitors in 1979 spent approximately 1 billion in the City, or a 27% increase over the $829 million spent in 1978.

Of the 7,546 San Francisco Convention and Visitors Bureau advertised hotel rooms in the study area, the estimated annual occupancy rate for 1978 and 1979 (based on telephone conversations with hotel managers and assistant managers) was 85%, which represents a shortage of hotel rooms within the area. An annual occupancy rate of 70-80% or more represents an unmet demand for hotel space./7/ Occupancy at the 5 existing Holiday Inns in San Francisco averages 90%, with 100% occupancy during most of the summer months. The completion of the George R. Moscone Convention Center (scheduled for July 1981), located within 1/2 mile from the project site, is expected to increase demand for hotel space in the immediate vicinity by up to 3,500 rooms./8/

Reservations at the existing 5 Holiday Inns come from a variety of sources. These include:

1. One third of reservations via the Holidex computer system tied into Holiday Inn's nationwide network of hotels;

2. Approximately 25% of reservations via "packaged" tour and travel businesses, such as the Japan Travel Bureau, American Express, Thomas Cook; and

3. Approximately 42% from the commercial sectors, including a variety of sources, such as corporate businesses and single reservations called in directly or through a travel agency.

Holiday Inn controls the mix of reservations, which varies from hotel-to-hotel. For example, the Holiday Inns at Fisherman's Wharf and Union Square do not generally accept "packaged" tour business because of the demand in their respective locations./9/ The demand at specific locations could run as high as 50% via the Holidex reservation system, if allowed. However, such reservations are restricted to limit the number of "packaged" tours at discounted rates. The availability of banquet and meeting facilities, location within the City, and management decisions have a bearing on the rates and occupancies for each of the hotels. As is typical of the majority of downtown hotels, summer occupancies at the 5 existing Holiday Inns average 90-100%.

NOTES - Economic, Employment and Fiscal Factors

/1/Dames & Moore, July 1979.

/2/City and County of San Francisco, Assessor's Office, phone conversation, 13 August 1980.

/3/Based on $110,000 estimated receipts for 1980 per 2 October 1980 telephone conversation with Cheryl Lyons, Project Coordinator, Cahill Construction Co.

/4/Dames & Moore, Robert T. Mott, Principal Economist, personal communication, 22 April 1980.

/5/San Francisco City Planning Commission and San Francisco Redevelopment Agency, 1978, "Final Environmental Impact Report, Yerba Buena Center" Volume I, San Francisco, CA., pp. 97 to 98b.

/6/San Francisco Convention and Visitors Bureau, "1979 Annual Report," 1390 Market Street, San Francisco, CA. 94102.

/7/Economic Research Associates, 1979, personal communication.

/8/Laventhol and Horwath, 1979, "Projected Hotel Tax Collection for San Francisco," Schedule 2.

/9/Holiday Inn-Financial District, Mr. Harold Berlo, Innkeeper, personal communication, 16 July 1979.

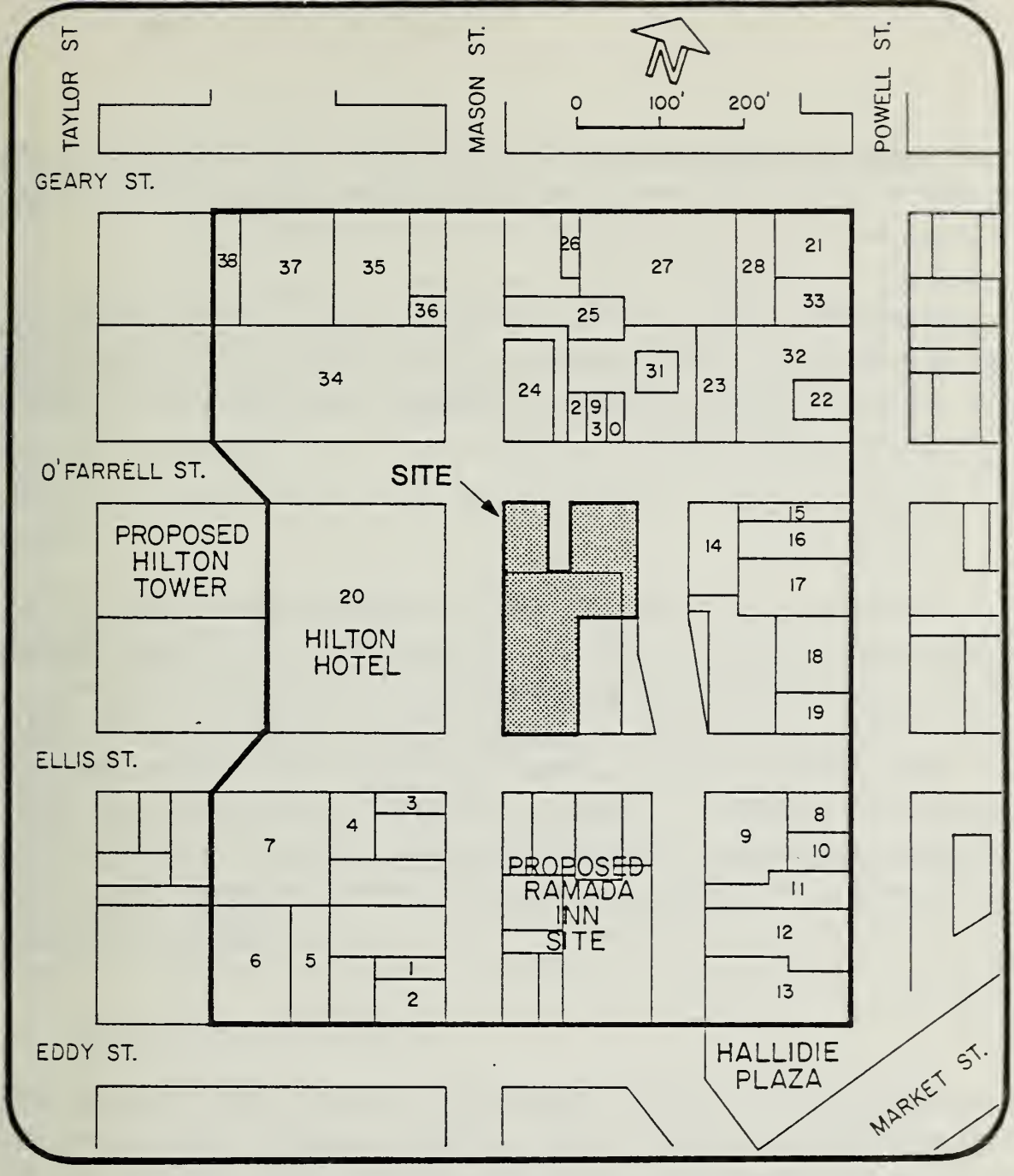
D. URBAN DESIGN FACTORS

ARCHITECTURAL RESOURCES

The project site is currently used exclusively for automobile parking. No structures are present on site except the small (approximately 200 sq. ft) Fairway Rent-A-Car check-in structure.

Several buildings in the project study area have received recognition in the City's Architectural Survey/1/ and the survey by the Foundation for San Francisco's Architectural Heritage./2/ Each building in the immediate vicinity of the project block that is listed in either survey is shown in Figure 18 p. 43, together with the survey ratings. The most highly rated buildings in the project study area include the Bank of America Building (1 Powell St.), the Curran Theater (845 Geary), the Geary Theater (415 Geary) and an office building at 323 Geary. With the exception of the office building, which received a rating of "B" from the Heritage Survey, each of these buildings received ratings of "A" in the Heritage Survey and "5" in the City survey (the highest ratings given in each survey).

The project site was the location of the San Francisco Young Men's Christian Association from 1894 to 1906. The structure was demolished by the earthquake and fire of 1906./3/ The Department of City Planning has determined that the proposed site has a low potential for archeological finds./1/ All of the structures originally built on the site have been razed. There are



GEND

Building	S.F. DCP Inventory: Summary Rating /a/	Heritage Survey /a/
24 Mason	1	NL
otel Mason, 101-111 Mason	2	NL
57 Mason	1	NL
29-231 Ellis	1	NL
otel Empress, 136-144 Eddy	1	NL
otel Wm. Penn, 156-166 Eddy	1	NL
33-261 Ellis	1	NL
owell Bldg., 111 Ellis	1	C
ontinental Hotel, 119-139 Ellis /b/	2	B
5-49 Powell	NL	C
owell Cinema, 35-41 Powell	1	C
owell Hotel, 17-23 Powell /b/	1	B
ank of America, 1 Powell /b/	5	A
35-243 O'Farrell /b/	3	B
01-219 O'Farrell /b/	NL	B
otel Herbert, 151-161 Powell	NL	C
45-149 Powell /b/	1	B
1-133 Powell /b/	2	B
ss Butler Bldg., 120 Ellis	1	C

	Building	S.F. DCP Inventory: Summary Rating /a/	Heritage Survey /a/
20	Hilton Hotel	2	NL
21	323 Geary	5	B
22	Howard Bldg., 207 Powell	1	C
23	Spauldin Hotel, 240 O'Farrell	1	C
24	Hotel Virginia, 300-312 Mason	2	C
25	King George Hotel, 334 Mason	1	C
26	381 Geary	1	B
27	Hotel Stewart, 351 Geary	2	B
28	333 Geary	2	B
29	280 O'Farrell	NL	C
30	272 O'Farrell	NL	C
31	Handlery Motor Inn, 250-260 O'Farrell	NL	NR
32	Manx Hotel	NL	C
33	235-245 Powell	NL	C
34	301 Mason	2	NL
35	Geary Theater, 415 Geary	5	A
36	Geary Theater Annex, 333 Mason	NL	B
37	Curran Theater, 445 Geary	5	A
38	459 Geary	1	B

ee Appendix A For explanation
f surveys and ratings

dopted 29 May 1980.

NL: Not Listed
NR: Not Rated
Study Area Boundary

RCE: DAMES & MOORE

FIGURE 18 : ARCHITECTURAL RESOURCES

3 structures within the western half of Block 326, none of which is cited in the 1976 Architectural Inventory, or listed in the inventory of San Francisco's buildings and sites of architectural and historic interest./1/

The proposed site is one block west of the Powell Street corridor on the edge of the City's retail district, an area noted for its cultural diversity. The architectural ratings of buildings in the area of the project site attest to the significance of the area.

SITE VISIBILITY

The project site is currently used for surface parking, with 2 billboards located on the site at the corner of N. 5th St./O'Farrell and Ellis/Mason Streets. Both billboards rise approximately 35 ft. above street level. The project block is occupied by a 3-story commercial structure at 279 O'Farrell St. (Heine Piano Co.) and a 7-story residential hotel (Maria Manor Hotel) located at 174 Ellis St. These structures are similar to each other in appearance, each having a light-colored masonry exterior. A total of 15 trees and 10 decorative lampposts along the 4 street frontages facing the site provide the principal visual amenities at the perimeter of the project block. The general visual character of the site and immediate environs is depicted in Figure 14, pp. 31 and 32.

Buildings which face the project site on its 4 street frontages include structures that are similar in scale and use to those on the project block. To the north and east of the site along O'Farrell and N. 5th Sts. are buildings ranging from 4 to 9 stories. The ground levels, devoted to commercial uses, together with the vertical composition of the buildings along O'Farrell St., visually form an extension of the cohesive Powell Street corridor. Immediately south of the site, along Ellis St., is a surface parking lot and 1-story vacant commercial building, recently damaged by fire. With the exception of the existing 17-story Hilton Hotel complex located immediately west of the site along Mason St., structures facing the project block are compatible both in scale and appearance with those which occupy the project

block. The Hilton Hotel complex affords the only immediate contrast in scale (see Figure 14, View 4, p. 31).

Of the structures that occupy the blocks surrounding the project site, those in the block north (Assessor's Block 315) afford the most noteworthy appearance and present a visual experience distinctive of the Powell Street corridor. Less noteworthy buildings fronting the project block are located east of the project site along N. 5th St. These buildings present a side profile to pedestrians on N. 5th St., with service entrances and fire escapes evident.

In general, the visibility of the project site is limited to adjacent street segments (including Market St., and portions of the street level area around Hallidie Plaza) and buildings fronting those streets. The site is not generally visible from long-range viewpoints, such as Yerba Buena Island, the Marin Vista Point of the Golden Gate Bridge, or Telegraph Hill due to intervening structures and the presence of Nob Hill. The site is visible from points on Nob Hill, including the upper floors of nearby high-rise structures (such as the Hilton Hotel, the Holiday Inn on Sutter Street, and the St. Francis Hotel Tower).

SUNLIGHT AND SHADOW EFFECTS

The existing structures on the project site and in the surrounding area create shadow effects that vary according to cloud conditions, time of day, and season of the year. In late winter and early spring, when the sun is lowest in the sky at mid-day, in the late afternoon and evening hours, shadows are cast within the site by the Hilton Hotel. In mid-summer, when the sun is at its highest during mid-day, shadows generally do not extend outside of the surrounding street area onto the site.

NOTES - Urban Design Factors

/1/San Francisco Department of City Planning, 1976 Architectural Inventory.

/2/Foundation for San Francisco's Architectural Heritage, 1979, Splendid Survivors.

/3/Drury, Clifford M., 1963. San Francisco Y.M.C.A. 1853 - 1953: One Hundred Years by the Golden Gate, Arthur H. Clark Co.

E. TRANSPORTATION, CIRCULATION, AND PARKING

STREET AND FREEWAY SYSTEM

Traffic movement adjacent to project site is 1-way on all streets. Traffic moves westbound on Ellis St., southbound on Mason St., eastbound on O'Farrell St., and northbound on N. 5th Street. Street right-of-way characteristics (including direction of flow, number of lanes, width of lanes, and effective width of sidewalks) for segments of N. Fifth, Eddy, Ellis, Taylor, Geary, Powell, Mason, and O'Farrell Streets are contained in Table A-1, pp. 196 through 198.

Major thoroughfares in the surrounding area designated by the Transportation Element of the San Francisco Comprehensive Plan/1/ are Market, Turk and Geary Streets. The Plan defines major thoroughfares as crosstown thoroughfares whose primary function is to link districts within the City and to distribute traffic from and to the freeways; these are routes generally of citywide significance and of varying capacity depending on the travel demand for the specific direction and adjacent land uses. O'Farrell Street, north of the site, is a transit-preferential street, with the south lane designated as a diamond lane (buses only) between 7:00 and 9:00 a.m.

Traffic signals are located at each of project site's 4 intersections. A volume capacity analysis of the 4 intersections adjoining the project on Friday afternoon, 20 July 1979, indicates that operations are at Traffic Level of Service "C" or better (see Appendix A, Table A-2, p. 200, for definitions and volume-capacity ratios for each vehicular level of service, and Appendix A, Figure A-1, p. 199, for evening peak hour intersection turn movements).

Regional service is provided by Interstates I-80 and I-280 located 3/4 to 1 mile south of the project site. Westbound on-ramps to Route 80 are located at 4th St. and 7th St. The eastbound on-ramp at 5th St. provides a connection to the Embarcadero Freeway (Route 480) and the Bay Bridge. The westbound

on-ramp to Route 280 is at 6th St. Interstates 80 and 280 have interchanges with U.S. 101 to the southwest of the project.

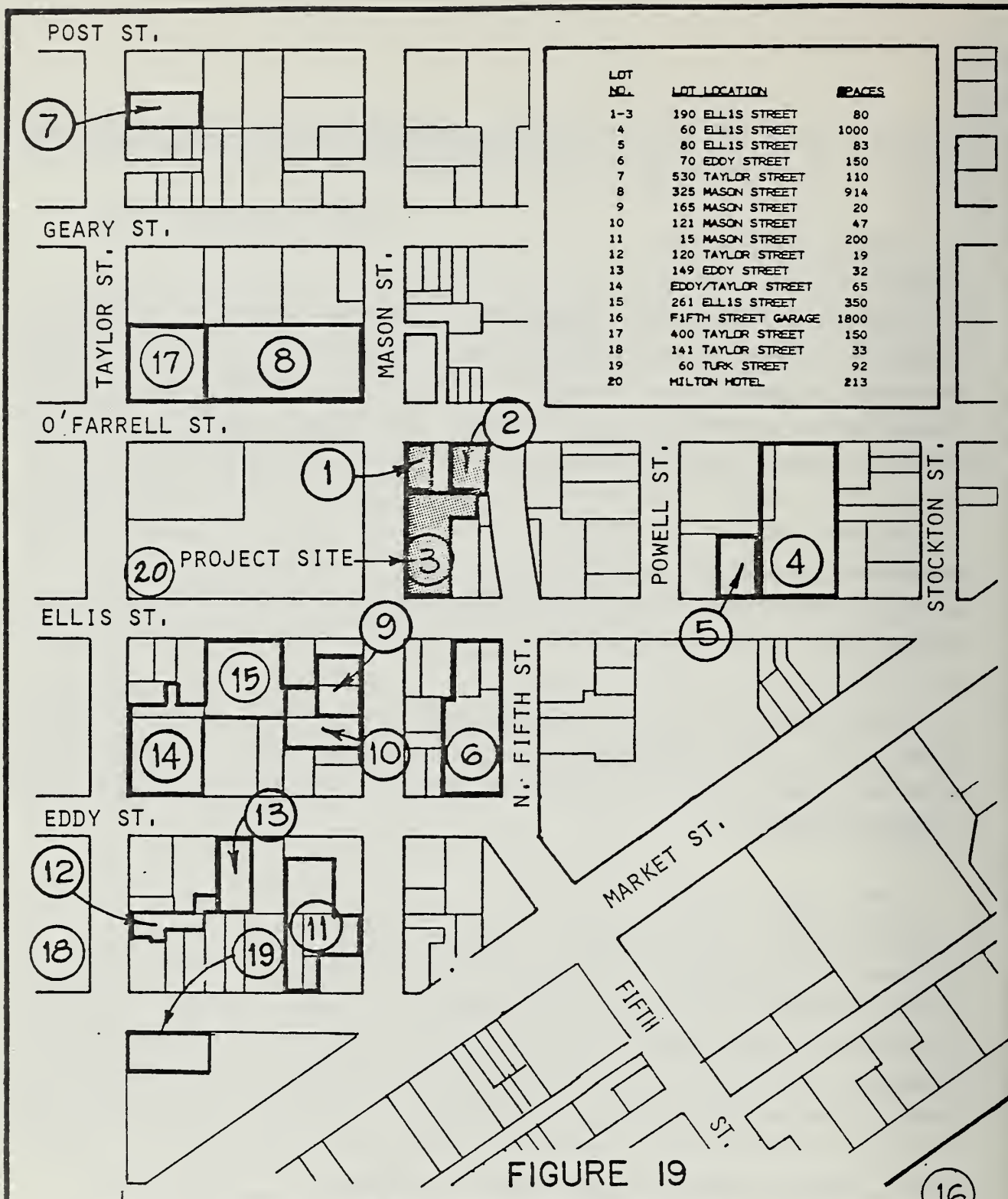
PARKING AVAILABILITY

A survey of long-term (longer than 6 hours), commercially available, off-street parking in the surrounding area indicated in Figure 19, p. 48, was conducted on Wednesday, 18 July 1979, and Saturday, 16 February 1980. In this area there is a total of 5,360 long-term, commercially available off-street spaces, of which 4,290 are available on an hourly or daily basis and 1,070 are rented for a period of one month or longer. Excluding monthly rental spaces, approximately 80% of all off-street spaces are available for public use (see Appendix A, Table A-3, p. 201). These include the existing spaces on the sites of the proposed project (80 spaces) and of the proposed Ramada Inn (150 spaces) and public spaces in the existing Hilton Hotel garage (213 spaces).

Off-street occupancy and turnover rates are listed in Appendix A, Table A-3, p. 201. The average weekday occupancy rate is 83% of the spaces available for public use. The turnover rate varies from 0.6 to 3.0 vehicles per space on weekdays.

The figure for the net number of available spaces does not describe the full number of off-street parking spaces sometimes available to the public because hotels in the area make their parking lots available for public use when the lots are not reserved for guest parking. This supply would contract and expand on the basis of the hotels' business cycle and, therefore, would tend not to be available at peak times. Parking lot attendants seldom turn away short-term customers; all of the stalls might be filled, but these customers are accepted and their vehicles are stored in service areas, aisles, or any space which might be available.

On-street parking spaces as of February 1980 in the surrounding area bounded by McAllister, Leavenworth, Sutter, Grant, Market, Third, Mission and Seventh Sts. (Sutter, Grant and Mission Sts. themselves were not surveyed) are listed in Appendix A, Table A-4, p. 202. The totals of this inventory are:



LOT NO.	LOT LOCATION	SPACES
1-3	190 ELLIS STREET	80
4	60 ELLIS STREET	1000
5	80 ELLIS STREET	83
6	70 EDDY STREET	150
7	530 TAYLOR STREET	110
8	325 MASON STREET	914
9	165 MASON STREET	20
10	121 MASON STREET	47
11	15 MASON STREET	200
12	120 TAYLOR STREET	19
13	149 EDDY STREET	32
14	EDDY/TAYLOR STREET	65
15	261 ELLIS STREET	350
16	FIFTH STREET GARAGE	1800
17	400 TAYLOR STREET	150
18	141 TAYLOR STREET	33
19	60 TURK STREET	92
20	MILTON HOTEL	213

FIGURE 19

OFF-STREET PARKING LOTS IN THE PROJECT VICINITY

SOURCE: JOHN FORRISTAL, TRAFFIC CONSULTANT, 1980

FEET
100 0 100 200 300 400 500

Metered Regular	Metered Special Truck Loading	Yellow Zones	White Zones	Taxi Zones	Green Zones	Handicapped
723	102	198	154	8	9	1

The occupancy rate for on-street parking is about 94% during typical weekdays based on the Tuesday, 12 February 1980, survey conducted from noon to 6 p.m. The turnover rate is estimated at 1.8 vehicles per hour (vph) per space. Observations indicated that occupancy ranged from 88% in the mid-afternoon to a high of 100% at midday. On-street parking is not readily available at night, since parking is saturated at any hour when special events are held in the area.

Overall use of on-street parking is conditioned by several factors. The general scheme to handle peak hour movement is prohibition of parking between 7 a.m. and 9 a.m. on the eastbound (inbound) streets and between 4 p.m. and 6 p.m. on the westbound (outbound) streets in the area of the project site. To allow for street sweeping, parking is prohibited in the area from 2 a.m. to 6 a.m. on the north or west side of a street on Tuesday and Thursday.

Some metered spaces are designated as truck loading zones from 7 a.m. to 1 p.m. or during the afternoon period. The standard loading (yellow) zones apply from 7 a.m. to 6 p.m. (unless peak hour parking is prohibited) from Monday through Saturday, freeing the zones for general parking at other times (except when use of the space is prohibited for street sweeping). The passenger loading zones apply whenever the adjacent business is open, which might be 24 hours a day, 7 days a week.

PEDESTRIAN MOVEMENTS

Pedestrian movements at sidewalks and crosswalks serving the project site were recorded on Friday, 20 July 1979, for the period of 4-6 p.m. The flow level of pedestrian traffic for the 4 abutting sidewalks was unimpeded. A description of pedestrian flow levels is in Appendix A, Table A-5, p. 205.

In general, pedestrian traffic during the peak p.m. vehicle traffic hour was observed to move unimpeded along the sidewalks and through the intersections. Pedestrian movements on O'Farrell Street, which shows the highest pedestrian count per hour, operate unimpeded for the sidewalk adjacent to the site. Sidewalks along O'Farrell Street several blocks east of the project site are congested as are other sidewalks in the Union Square area.

TRANSIT SERVICE

Transit preferential streets in the surrounding area include Geary Street for outbound (westbound) buses, O'Farrell Street for inbound (east-bound) buses, and Market Street for inbound and outbound buses and electric trolley coaches. A transit preferential street is one where priority is given to transit vehicles over autos, as designated in the Transit Preferential Streets Plan of the Transportation Element./1/ The O'Farrell Street diamond (bus) lane abuts the north side of the project site. Transit routes within the surrounding area are shown in Figure 27, p. 102. These include the following:

Rte. 25 - Ellis Street
Rte. 25 - Mason Street
Rte. 38 - O'Farrell Street
Rtes. 59 & 60 - (cable car) - Powell Street
Rtes. 31 & 84 - Taylor Street
Rte. 31 - Turk Street
Rtes. 38 & 38X - Geary Street

Regional transit via BART, Southern Pacific Transportation Company (SP), San Mateo County Transit District (SamTrans), Golden Gate Transit and Tiburon Ferry Service are available in the Downtown area, with Muni connections to the various services. The RIDES van-pooling program provides consulting and matching services to help establish Bay Area van and car pools.

Transit ridership for 1980 is shown in Section IV.E, Table 12, p. 101. Counts were derived based on data provided by the various services. Muni ridership on the lines shown in Section IV.E, Figure 27, p. 102 (except cable cars), has been projected by the Department of City Planning (see Table 12,

p. 101)./2/ Outbound peak-hour ridership volumes are expected to reach 92% of capacity by 1982. Bus capacity is considered to include one standee for every 2 seated patrons. The Powell St. cable car lines (59 and 60) were observed to be operating at or near capacity during the 4-6 p.m. period. Cable car p.m. peak hour ridership in January 1980 was 1,520 persons, about 84% of the 1,800-person capacity. BART capacity is considered to be 130% of the seat number.

In the capacity analysis ridership is averaged over the peak hour. There are periods during that interval when capacity is reached or exceeded, particularly for the Muni and BART. During these periods passengers are delayed and must wait for the next bus, streetcar or train with space available.

NOTES - Transportation, Circulation and Parking

/1/City and County of San Francisco, April 1972, "Transportation Element of the San Francisco Comprehensive Plan."

/2/Department of City Planning, Transportation Section, June 1980. "Guidelines for Environmental Evaluation of Transportation Impacts," Attachment 3.

F. METEOROLOGY AND AIR QUALITY

AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station approximately 1 mile west of the site. A 3-year summary of the data collected at this station and the corresponding air quality standards appears in Appendix C, Table C-1, p. 219.

San Francisco's air quality is the least degraded of the developed portions of the Bay Area. The prevailing westerly and northwesterly winds tend to disperse pollutants from the City to the East Bay and South Bay. Annual fluctuations in air quality are due to a combination of pollutant emissions and meteorological factors. Pollutant emissions have been decreasing in the Bay Area and are expected to continue to do so in the near future. Highest annual pollutant concentrations in San Francisco have shown general improvement during the 1971 - 1979 period. Annual numbers of violations of

air quality standards have not shown any clear overall trend during the same period. In 1979, 3 violations of the carbon monoxide and particulate standards occurred.

The Bay Area Air Basin has been designated by the California Air Resources Board as a non-attainment area for ozone (oxidant) and carbon monoxide; San Francisco is a non-attainment area for particulates (i.e., the standards for these pollutants are now and are expected to continue to be violated). A regional Air Quality Plan/1/ was adopted in 1979 which establishes control strategies to attain and maintain the standards by 1987.

WIND

Meteorological characteristics such as wind speed and direction and thermal inversions determine the movement and dispersion of air pollutants as well as play a role in influencing personal comfort. Northwesterly and westerly winds are the most frequent and the strongest winds at all seasons in San Francisco. (Northwesterly winds refer to those blowing from the northwest.) Wind speeds near the proposed site vary daily and seasonally, with strongest winds occurring at the Mason and O'Farrell Streets intersection during the summer. Northwest winds exceed 13 miles per hour (mph) 35% of the time and 25 mph 3% of the time during the summer months. West winds, which are dominant in all months except December and January, occur between 15 and 40% of the time, exceeding 13 mph 29% of the time and 25 mph 7% of the time.

Wind tunnel tests/2/ of wind speeds and directions at the project site and vicinity were conducted under northwesterly and westerly wind conditions. Under northwest wind conditions, wind speeds varied from "low to high" with wind speeds of "low to moderate" under west wind conditions. Appendix B, p. 206, contains the results of the wind tunnel tests as well as a description of terms and of methodology used for the analysis.

NOTES - Meteorology and Air Quality

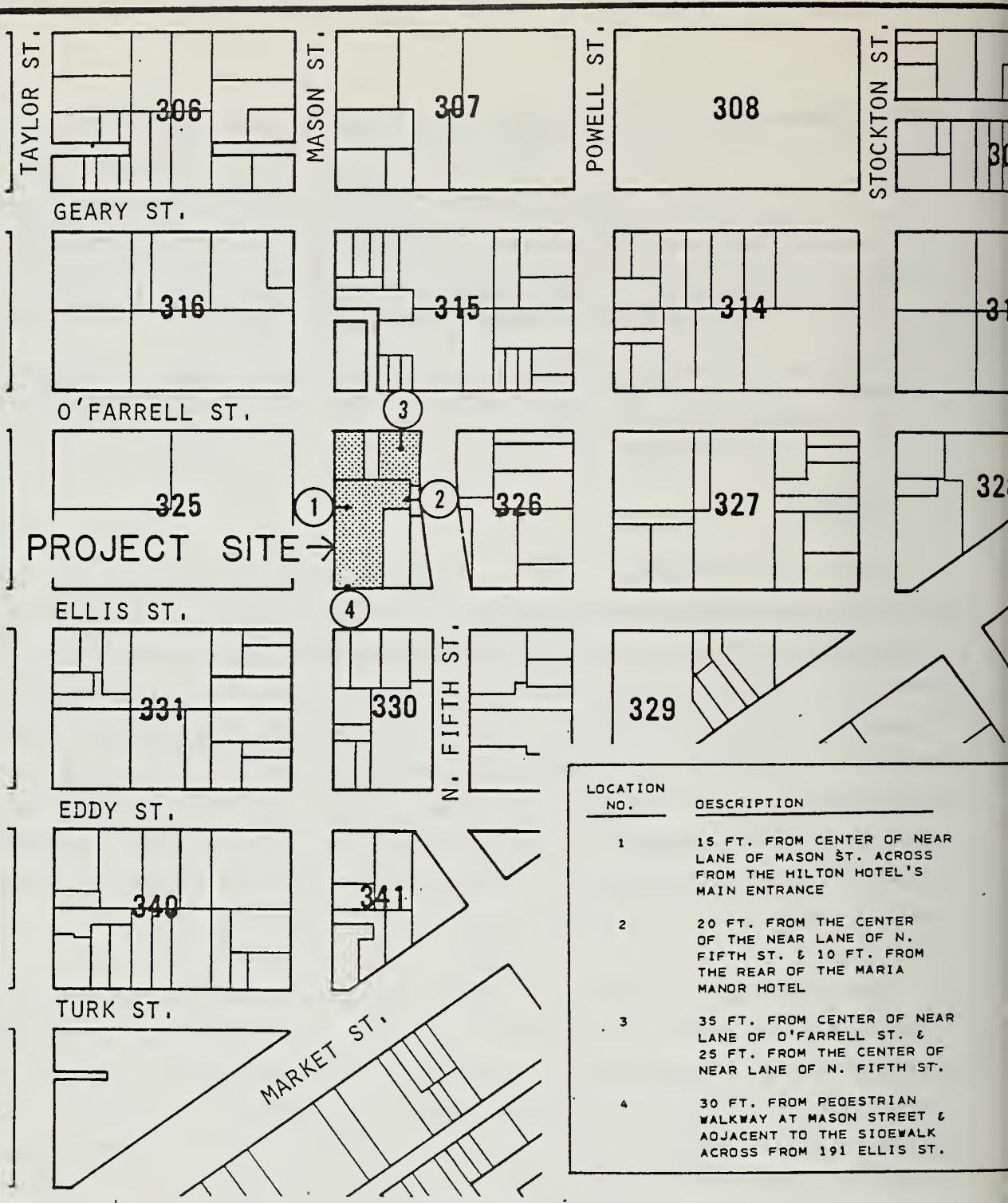
/1/Association of Bay Area Governments, BAAQMD, and Metropolitan Transportation Commission, January 1979, 1979 Bay Area Air Quality Plan, San Francisco Bay Area Environmental Management Plan. The Federal Clean Air Act Amendments of 1977 mandate that the ozone and carbon monoxide standards be attained by 1982, although a five-year extension is possible, and that the particulate standard be attained by 1987.

/2/Environmental Impact Planning Corporation, October 1980. "Microclimate Impact Study on the Proposed Holiday Inn-Mason & O'Farrell," San Francisco, CA. See Appendix B, p. 208.

G. NOISE

The sound environment of the site is dominated by traffic noise, as is typical throughout Downtown San Francisco. Trucks, buses, and automobiles are the major contributors. Sound levels were measured at 4 locations near the project site between 1:45 p.m. and 2:55 p.m. Friday, 6 July 1979 (see Figure 20, p. 54). The decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, excert a force known as the sound level, measured in decibels (dB's). Decibels corrected for the variation in frequency response of the typical human ear at commonly encountered sound levels are designated as A-weighted sound levels or dBA's. Typical ambient sound levels for the area varied from 58-83 dBA.

At measurement location 1, across from the Hilton Hotel main lobby entrance, traffic was the main source of noise. Whistling by the doorman to hail taxis and the slamming of car doors at on-street meter parking sites contributed to the background sound level. During lulls in traffic on N. 5th Street, the clattering of dishes and the low frequency rumble of air-conditioning equipment were discernible from the Bardelli Restaurant. At measurement locations 3 and 4, the stopping and starting of buses and autos at corner traffic signals were sources of noise. The passing of an occasional truck along Ellis Street contributed to the maximum level of 83 dBA at measurement location 4. Maximum levels generated at locations 1, 2, and 3 were less than those at location 4 due to the 5 to 25 ft. setback from the sidewalk of the microphone positions.



LOCATION NO.	DESCRIPTION
1	15 FT. FROM CENTER OF NEAR LANE OF MASON ST. ACROSS FROM THE HILTON HOTEL'S MAIN ENTRANCE
2	20 FT. FROM THE CENTER OF THE NEAR LANE OF N. FIFTH ST. & 10 FT. FROM THE REAR OF THE MARIA MANOR HOTEL
3	35 FT. FROM CENTER OF NEAR LANE OF O'FARRELL ST. & 25 FT. FROM THE CENTER OF NEAR LANE OF N. FIFTH ST.
4	30 FT. FROM PEDESTRIAN WALKWAY AT MASON STREET & ADJACENT TO THE SIDEWALK ACROSS FROM 191 ELLIS ST.

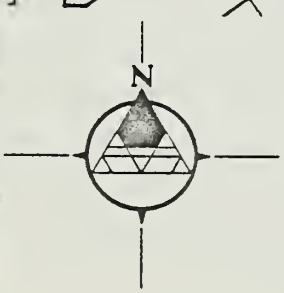
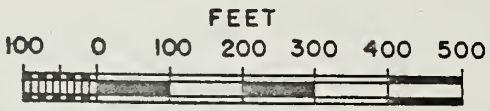


FIGURE 20

AMBIENT SOUND MEASUREMENT LOCATIONS

SOURCE: DAMES & MOORE



H. VEGETATION AND WILDLIFE

The project site is devoid of visible plant and animal life (with the exception of pigeons) with the area paved over by asphalt to provide surface parking space. Plants and shrubs noted near the project site (lot #22) are Baccharis (coyote bush) and Artemisia (tarragon)./1/ These are found emerging from the side of the Maria Manor Hotel on Ellis Street. Also evident are species of grass - Cortaderia (Pampas Grass) and Festuca megalura./1/ None of the plants observed near the site are officially protected under either the Federal Endangered Species Act /2/ or the State Native Plant Protection Act./3/ No plant which has been proposed for protection under these acts /4/ was noted on or near the site.

NOTES - Vegetation and Wildlife

/1/Dames & Moore, field reconnaissance, 8 August 1980.

/2/U.S. Fish and Wildlife Service, 1979a. "List of Endangered and Threatened Wildlife and Plants - Republication", 44 Federal Register, No. 12, pp. 3636-3654, 17 January.

/3/S. Rae, 1979b. "List of Plants Protected Under the Native Plants Protection Act" California EIR Monitor, Vol. 6, No. 19, 15 December.

/4/E.S. Ayensu, R.A. Defilipps, S.E. Fowler, M.C. Mangone, C. Matti-Natella, and W.E. Rice, 1978, Endangered and Threatened Plants of the United States, Smithsonian Institution and World Wildlife Fund, Inc. Washington, D.C.; and Powell, R. W. ed., 1977, Inventory of Rare and Endangered Vascular Plants of California, California Native Plant Society, Arcata, CA.

I. COMMUNITY SERVICES AND UTILITIES

POLICE

The police services for the project site are covered by the Central Police Station located at 766 Vallejo Street. Currently there are 123 personnel assigned to Central Station. The proposed project site, which is within Reporting Area 362, is patrolled by 1 radio car and 2 beat officers./1/

During the period of 1979, Reporting Area 362 had a total of 2,846 incidents for which a police report was made, making it one of the highest crime areas in the City. The average number of incidents for the 29 reporting areas in the Central District was 827 during 1979, with 1 reporting area having a greater crime rate than the project area. Note that all reporting areas are not of equal size or population. Reporting Area 362 is bounded by Geary, Market, Eddy and Mason Streets. Burglary, assault and theft are the primary criminal problems in this reporting area. Burglaries and thefts accounted for approximately 39% of the reported crime in the proposed project site area./2/ Reporting Area 360, immediately west of the site and bounded by Geary, Mason, Eddy and Leavenworth Streets, reported a total of 3,071 incidents making it the highest crime reporting area within the Central District./2/

FIRE

Fire protection services are provided by the San Francisco Fire Department. The fire stations serving the area in order of response are located at 1) 5th and Jesse; 2) 3rd and Howard; and 3) Post and Polk. Hydrants are located at 3 corners of the proposed project site and the Fire Department can deliver 15,000 gallons of water per minute over a 100,000 sq. ft. area. Response time by the Fire Department to the project site is within 2 minutes./3/

WATER

Most of San Francisco's water supply is obtained from the Hetch Hetchy system. The proposed site area is served by the 140 million gallon capacity University Mound Reservoir located north of McLaren Park. Sixteen-inch diameter water mains, 1 on O'Farrell Street and 1 on Mason Street, supply the project site. Water use for the first 6 months of 1979 in the project area averaged 43,500 cu. ft. per month or 10,900 gallons per day./4/

WASTEWATER

Combined storm and sanitary sewer services serve the proposed project site. Dry-weather and storm flows generated in the vicinity of the proposed project site are treated at the North Point Water Pollution Control Plant. The site is served by four 3 x 5 brick mains located around the site./5/ The City's sewer system is presently not in compliance with the Clean Water Act because of the dumping of untreated waste directly into the Ocean and Bay under wet weather conditions. Planned improvements to the system would bring it into compliance.

SOLID WASTE

In the area of the proposed hotel, domestic solid wastes are collected by the Golden Gate Disposal Company. Wastes are transported to a transfer station north of Brisbane and deposited in a landfill site at Mountain View Shoreline Park. The present contract allows for the use of the site through 1983./6/ Other potential future disposal sites are under investigation. The Sanitary Fill Company has prepared a proposal for a Resource Conversion Center, which would be constructed south of the site of the existing transfer station in the City of Brisbane. Adoption of this proposal would result in a reduction of landfill material and the burning of combustible materials to produce energy. Impacts of this proposal are discussed in the draft Final EIR/7/. San Francisco is not committed to this project; its future is uncertain.

NOTES - Community Services and Utilities

/1/San Francisco Police Department, Field Operations, 16 July 1979.

/2/San Francisco Police Department, 1979. "Incidents for Which a Police Report was Made by District, Plot and Crime: January - June 1979."

/3/San Francisco Fire Department, Fire Marshal, Chief W. Graham, personal communication, 17 July 1979.

/4/San Francisco Water Department, Manager of City Distribution Division, Jack Kenck, personal communication, 31 March 1980.

/5/Bureau of Sanitary Engineering, Wastewater Control Division, M. Francis, telephone communication, 19 July 1979.

/6/Golden Gate Disposal Company, Office Manager, F. Garbarino, telephone communication, 19 July 1979.

/7/Environmental Science Associates, Inc., June 1980. "Final Environmental Impact Report - Resource Conversion Center, Brisbane/San Francisco, California" prepared for City of Brisbane, Ca., State/Clearinghouse No. 79051401, not yet certified by the Brisbane City Council as of the printing date of this Holiday Inn EIR.

J. GEOLOGY, SEISMOLOGY AND HYDROLOGY

TOPOGRAPHY

The site is located on gently sloping land on the south flank of Nob Hill. Elevation of the site is near 50 feet City and County of San Francisco Datum (established as the basis for survey evaluation by the City at 8.616 feet above mean sea level). The North-South relief across the site is about 10 feet from Ellis to O'Farrell, with little relief in the East-West direction.

GEOLOGY

Subsurface data from the Soils and Foundation Investigation for the Holiday Inn/1/ indicate that the site is underlain by rubble and remnants of previous construction for a depth of 4 to 14 ft. Medium dense sands underlie the rubble and extend to a depth of approximately 92 ft. Stiff, sandy clay was encountered below the sand and extended to the depth of exploration (107

ft.). A medium-dense soil requires 10-30 blows of a 140-pound hammer falling 30 inches to drive a standard sampler 1 ft. into the material. These soil conditions allow for construction of a high-rise structure without the need for driving piles.

Available data from the nearby Hilton Hotel/2/ indicate that dense sand underlies the clay layer and extends to rock at a depth of about 180 to 190 ft. The soils and foundation investigation concluded that the tower would best be supported on a mat foundation while the base building section could be supported on either a mat or spread footings. Mat foundations and spread footings consist of reinforced concrete masses which spread the weight of the structure over a large surface area, typically of 20 sq. ft. or greater per footing.

HYDROLOGY

No water bodies, springs or water courses are located on the site. The site is sloping and under natural drainage would receive runoff from the north. Surface runoff is generally greatest during the wet season from November to April. Based on data from borings taken during the soils and foundation investigation, groundwater can be expected to rise to a depth of about 35 ft. during winter rains./1/

The project site is located above the estimated run-up area of the 500-year tsunami (a series of sea waves created by an earthquake, a coastal or submarine landslide, or a volcanic eruption at some distance from the point of run-up)./3/

SEISMIC HAZARD

No active faults (faults that have been known to have moved within the last 10,000 years) exist within the City and County of San Francisco (see Figure 21 p. 61). Seismic activity from several active faults outside of San Francisco affects the City: these faults are the San Andreas Fault, about 9 miles southwest of the site; the Hayward Fault, about 11 miles to the east; and the Calaveras Fault, about 20 miles to the east.

Earthquakes of the magnitude of the 1906 San Francisco earthquake (about 8.3 on the Richter scale of magnitude, a logarithmic scale developed by Charles Richter to measure earthquake magnitude by the energy released) can be expected every 60-170 years (estimates of recurrence intervals vary for the San Andreas fault). An earthquake of this size can be expected between 1980 and 2076. Several earthquakes on the San Andreas and other faults comparable to the 1957 Daly City earthquake (about 5.3 on the Richter scale) can be expected to affect the City during the lifetime of the proposed project.

According to John A. Blume's San Francisco Seismic Safety Investigation, Geologic Evaluation,/4/ the only potential earthquake hazard on the project site is "very strong" ground shaking. This conclusion is based on the degree of destruction experienced during the 1906 earthquake for the area. The "very strong" shaking zone was defined as a seismic zone where "brick work and masonry badly cracked with occasional collapse, and some brick gables were thrown down; frame buildings lurched or listed on fair or weak underpinning structures; general destruction of chimneys and of masonry, brick or cement veneers occurred; and considerable cracking of or crushing of foundation walls occurred."

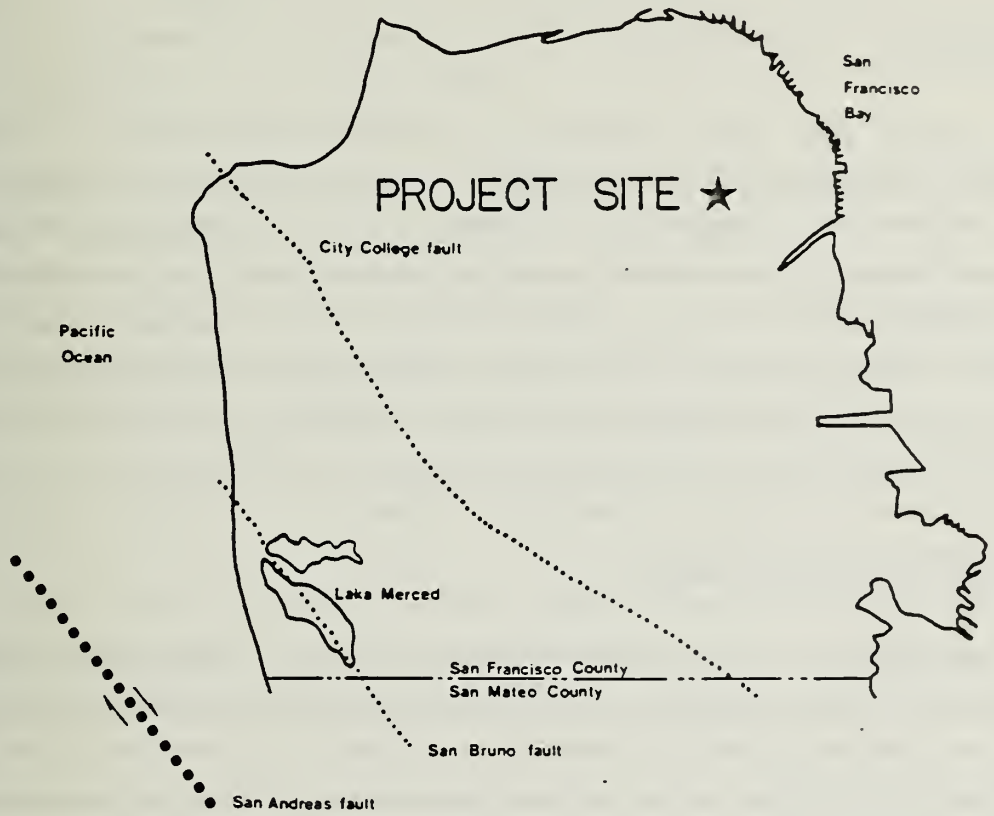
NOTES - Geology, Seismology & Hydrology

/1/Converse Ward Davis Dixon, Geotechnical Consultants, 29 July 1980. Soil and Foundation Investigation for the Holiday Inn - Mason and O'Farrell, San Francisco, Ca., prepared for GHT Associates, Project No. 80-4115-01.

/2/Woodward-Clyde & Associates, 1968, Soil Investigation for the Hilton Hotel, Taylor and Ellis Streets, San Francisco, California for the Hilton Hotel Corporation.

/3/Garcia, A. W., and J. R. Houston, 1975. Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, Technical Report H-75-17, Hydraulics Laboratory, U.S. Army Engineer Waterways Experiment Station, P.O. Box 631, Vicksburg, Mississippi, 39180.

/4/URS/John A. Blume and Associates, June 1974. San Francisco Seismic Safety Investigation. Prepared for the San Francisco Department of City Planning.



●●●●●●● Concealed active fault

····· Concealed faults not known to be active

Source: City and County of San Francisco, Final Environmental Impact Report: Southwest Outfall, San Francisco Wastewater Master Plan, Implementation Program V, EE 75.179, certified 18 December 1975

N

FIGURE 21

FAULT MAP

MILES

0 1 2 3

IV. ENVIRONMENTAL IMPACTS

A. LAND USE AND ZONING

LAND USE

The project site would experience a change in the nature of land use, from surface parking lots to high-rise commerical hotel. The proposed 27-story Holiday Inn would displace 30,100 sq. ft. of leaseable parking space used by 80-100 cars. This would be replaced with parking for 81 cars (approximately 30,200 gross sq. ft.), about 2200 sq. ft. of leasable retail space, and 434,000 gross sq. ft. of hotel space (including service, circulation and mechanical spaces). No residents would be displaced by the project. Fairway Rent-a-Car would be dislocated should the project be developed.

CUMULATIVE LAND USE IMPACT

The project site for the proposed Holiday Inn is located immediately west of the Powell Street Corridor, in an area of the City that has traditionally served as a divide between the Tenderloin District and the Retail District. Land use in the vicinity reflects this transitional character, with visitor-oriented activities mixed together with businesses providing services to local residents. Located in a visitor-oriented activity center, the project site is two blocks north of Hallidie Plaza and two blocks northwest of the Powell St. cable car terminus. Union Square and the Geary Street theater district are about one block north of the site.

As a tourist-based, residential land use, the proposed project would be similar to the Hilton Tower and Ramada Inn proposed for development west and south of the project site, respectively (see Figure 2, p. 11). In combination, the three hotel developments would increase the intensity of land use in the eastern Tenderloin District. Development of the transient-tourist based hotels could indirectly cause a corresponding change in land use activity in the vicinity, particularly on street frontages facing the project sites. The

nature and extent of change that could be attributable to these hotel developments would be highly speculative. While the overall variety of uses in the Tenderloin - Retail District adjacent to the project sites would be expected to remain unchanged, the influx of transient tourist population could result in the conversion of businesses currently serving local needs to establishments oriented to the tourist trade.

Development pressure in the area surrounding the three hotel project sites could increase as land speculation occurred. Ultimately, a general intensification of land use in the area could occur as under-developed property is converted to other uses. Parking lots and older buildings would be prime candidates for speculative activities oriented to the tourist trade generated by the hotel project. Many of the older buildings in the study area contain residential units, available for rent to low income residents of the Tenderloin District. To protect the limited supply of such housing in the area, a moratorium on conversion of residential hotels to transient tourist hotel uses currently exists for this area of the City. The moratorium is to expire in November 1980, as provided by Ordinance 169.80, approved by the Board of Supervisors on 28 April 1980. Adoption of the ordinance was in response to opposition from local residents to hotel conversions and to the displacement of residents and local businesses by tourist-oriented hotels and commercial establishments.

ZONING

The proposed highrise hotel would conform with the City Planning Code zoning classification of C-3-G (Downtown General Commercial designation) and the Height and Bulk District designation of 320-I, limiting the structure to 320 ft. in height. The total height of the proposed hotel would be about 300 ft., with the maximum plan dimensions for that portion of the building over 150 ft. in height totaling 132 ft. in length and 190 ft. diagonally, where the Code permits 170 ft. and 200 ft. respectively. The building height of 300 ft. is measured from mid-block along Mason Street to the top of the penthouse mechanical equipment space as described in Section 102.11 of the City's Planning Code; this represents an average and not the maximum height of the structure due to the sloping terrain.

The Floor Area Ratio of 10 to 1 for the project site would allow approximately 301,000 gross sq. ft. of building area on the site under the C-3-G zoning classification (not including bonuses). Additional square footage of developable floor space could be awarded to a high-rise alternative plan under provisions of Section 126 of the City Planning Code (development bonuses), whereby the basic floor area can be increased for proximity to rapid transit, sidewalk widening, etc. The bonus system was adopted by the Planning Commission to encourage development of building features which would not automatically be included by the project sponsors in design. The bonus system has recently come under scrutiny by various interest groups who are looking for a reduction in building height and bulk in the Downtown area. The award of development bonuses is in part based upon a review of proposed bonus features for their urban design amenity value. The City Planning Commission examines appropriateness of proposed bonuses under their Discretionary Review authority.

The project (FAR floor area of 410,000 sq. ft.) would not exceed the maximum allowable floor space (about 418,000 sq. ft.) if all bonuses available under the City's current Planning Code were awarded, as shown in Table 5.

Ordinance 240-80 of the San Francisco Board of Supervisors, effective from 1 July 1980, calls for the elimination of floor area bonuses and corner premium provisions provided in Section 126 of the City Planning Code for the C-3 "Downtown Commercial" Zoning Districts. Because the sponsor has submitted a preliminary draft Environmental Impact Report on 17 August 1979 prior to the filing deadline of 3 January 1980, the project would be eligible to retain its development bonuses, if approved. Furthermore, Ordinance 240-80 calls for the retention of development bonuses for hotels in the C-3 Districts in order to encourage new hotel development rather than conversion of existing residential hotels to transient hotels.

A description of bonuses requested by the project sponsors follows:

TABLE 5: ALLOWABLE FLOOR SPACE UNDER THE CITY'S PLANNING CODE

Building Area	Proposed Hotel Gross Floor Area in Sq. Ft./a/	FAR Floor Area in Sq. Ft.
Base Building:		
Level 1	13,200	13,200
Level 2	25,700	25,700
Level 3	24,100	24,100
Level 4 Mechanical	15,100	—
Tower:		
Level 5 thru 27 @15,072 sq. ft. each	346,700	346,700
Basement:		
Parking Level B-1	13,200	—
Parking Level B-2	22,000	—
Parking Level B-3	13,200	—
Penthouse:		
P-1	1,700	--
P-2	900	--
Actual Building Areas (total)	475,800	409,700

	Allowable Hotel Gross Floor Area in Sq. Ft./a/
Allowable C-3-G (10:1 Floor Area Ratio)	300,800
Bonuses:	
1. Bart Access	0
2. Bart proximity (max. 10%)	8,000
3. Parking (max. 5%) 81 cars	8,100
4. Multiple building exit (max. 5%)	15,000
5. Sidewalk widening (max. 15%)	45,100
6. Shorten walking distance (max. 10%)	2,500
7. Plaza	0
8. Side setback	0
9. Low coverage @ upper floors (max. 15%)	28,800
10. Observation Deck (no maximum %)	10,000
Allowable Planning Area with Bonuses (total)	418,300
Permitted Parking (0.07 x 475,800 sq. ft.):	33,300
Proposed Parking (less ramp sq. ft.):	30,200

/a/ Gross square footage estimated to nearest 100 sq. ft.

Source: Gensler & Associates, 12 September 1980.

Rapid Transit Proximity: the proposed project is 550 ft. from a BART station, where the code provides a 40 sq. ft. bonus for "each linear foot by which walking distance to station mezzanine is less than 750 feet," up to a maximum of 10% of the Basic Allowable Gross Floor Area of 301,000 sq. ft.

Parking Access: 81 underground parking spaces would be provided. The Code provides a bonus of 100 sq. ft. per space to which direct access is provided other than in C-3-O and C-3-R districts.

Sidewalk Widening: present sidewalk widths vary from 7-12 ft. Sidewalks would be set back approximately an additional 10 ft. on Mason, Ellis and North 5th. Streets and 18 ft. on O'Farrell St. A bonus of 6 sq. ft. is provided for "each creditable square foot of sidewalk widening area," up to a maximum of 15% of the Basic Allowable Gross Floor Area.

Shortening Walking Distance: calculated by comparing walking distances along streets with distances "along walkways through the subject lot that are open during all business hours . . . for use by the general public." (See Figure 4, p. 18). The bonus is 30 sq. ft. per linear foot by which walking distance between streets or alleys is reduced, up to a maximum of 10% of the Basic Allowable Gross Floor Area.

Low Coverage at Upper Floors: a bonus of up to 15% of the Basic Allowable Gross Floor Area may be granted for open spaces meeting the provisions of Code section 126(b)9.

Observation Deck: observation decks open to the public would be constructed on the top 2 floors. A maximum bonus of 10,000 sq. ft may be granted per observation deck open to the public, at or above the 20th story, and of sufficient size to accommodate at least 50 people at the same time. The proposed lower and upper decks would accommodate 72 and 93 people, respectively. The minimum sq. ft. per occupant is 7 as specified by the San Francisco Building Code./1/ Although the project could be allowed an additional 10,000 sq. ft. above that applied for, if approved by the Zoning Administrator, the project sponsors have applied for only a 10,000 sq. ft. bonus for the 2 observation decks.

Multiple Building Entrances: each side of the building would have a public entrance with provisions for handicapped persons. A bonus of 7,000 sq. ft. may be allowed for each "major entrance to the building after the first such entrance," up to a maximum of 5% of the Basic Allowable Gross Floor Area.

NOTES - Land Use and Zoning

/1/San Francisco Building Code, 1978. Table 5, Section 509.1, p. 116.

B. SOCIAL CHARACTERISTICS

The impact of the proposed project on the existing social characteristics of the northeast portion of the Tenderloin District is difficult to quantify. The introduction of a new transient-tourist hotel on the fringe between the Tenderloin and Retail districts would generally improve the physical and aesthetic appearance of the "buffer area." Development of the proposed project would be consistent with existing land use activities in this area of the City. Located in a visitor-oriented activity center, the proposed project would represent a gradual expansion of the Retail District activities into the Tenderloin area.

The physical and aesthetic improvement of the project site may result in a general increase of property values in the area, and could lead to subsequent development of properties regarded as under-developed and increased rents. The current moratorium on conversion of residential hotels in the study area indicates the City's concern about the rate of loss of low-income housing.

CUMULATIVE SOCIAL EFFECTS

Tentative plans for the area call for the construction of an additional 410 rooms at the Hilton Hotel at the corner of Taylor and O'Farrell Streets (1/2 block west of the project), and construction of a 1000 room Hotel Ramada within Assessor's Block 330 (south of the project). Construction of either or both of these projects would generate increased pedestrian activity within the project area. In addition, construction of these projects would intensify the use of the area and contribute to further expansion of the Retail District activities into the Tenderloin area.

Construction of the project and the Hotel Ramada and Hilton Tower No. 2 would result in an increase in property values in the area, and could lead to subsequent development and displacement of the existing permanent residential population and commercial businesses serving local interests.

C. ECONOMIC, EMPLOYMENT AND FISCAL IMPACTS

The proposed development would have approximately 805 guestrooms. The average room rate would be about $82 per night (in 1980 dollars) with an average annual occupancy rate of 69% in the opening year./1/ Average annual occupancy would be anticipated to reach 85% by the 5th year./1/

Room demand for the proposed Holiday Inn is projected to be comprised of approximately 25% group tourists, 33% group meetings and conventions, and 42% individuals and corporate business representatives./1/

EMPLOYMENT

The number of new employees upon the completion of the project is estimated to be approximately 360. Types of employment would include housekeeping, laundry, restaurant, engineering, administrative, retail and hotel clerks, bellmen, accounting, and security and supervisory personnel. Daily employment would fluctuate from 270 to 360 persons due to changes in hotel occupancy; full-time positions would increase at the site by at least 262 over the present full-time employment of 8.

It is estimated that the project would require 370 person-years of construction labor with a total payroll of approximately $12.3 million./2/ This represents an average of about 185 full-time jobs during the 24 months anticipated construction./2/ (About 24 person-years of design, engineering, planning and environmental, and legal services employment has also been required.)

Secondary temporary employment effects could result from direct construction employment because each employed person generates additional regional employment opportunities by his or her demand for goods and services. However, the dispersal of construction workers around the Bay Area would prevent any particular area from experiencing noticeable increases in induced employment and spending. A 5 to 10% increase in construction for the entire Bay Area would be required before changes would be noticeable./3/

It is not known to what extent construction or new full-time and part-time employees on the site would be newcomers to San Francisco, either as residents or commuters, rather than persons residing in the City but not currently employed or employed outside of the Downtown area. Surveys of employees at the existing Hilton Hotel indicate that approximately 68% reside within San Francisco./4/ About 85% of the hotel employees at the existing Holiday Inn on Kearny Street are estimated by Inn management/5/ to live within the City, mostly within the adjacent Chinatown area. It is estimated that employment for the proposed project would fall between these figures. The conservatively lower (68%) figure has been used for the impact evaluation. To the extent that employment opportunities within the project would attract employees generally from within the City, the project employees would not create additional housing demand. Part-time employment opportunities would be anticipated to draw from a pool of unemployed or under-employed people including teenagers, women, minorities, etc. While this employment would result in increased revenues for certain households, the tendancy of the project to attract a demand for new households in San Francisco can not be reliably quantified.

HOUSING AND BUSINESS RELOCATION

The proposed project would not result in any direct housing dislocations or mandatory relocations. The Maria Manor, a 119 room residential hotel, is the only residential building on Assessor's Block 326 and would not be demolished as part of the project.

Average age of tenants is 78. No one under 55 is accepted; tenants between 55 and 62 are accepted if totally disabled. Rents are approximately $250 per month with tenants' payments based on 1/4th of their verified monthly income. All tenants at the Maria Manor are retired and low-income with an approximate income of $400 per month; approximately $100 per month in tenants' incomes pays for rent. The balance of the rent is subsidized by the federal government. There are no other rent subsidies. Other programs at the Maria Manor include a Food Program which serves 30 people, sponsored by the United

Way. This service is provided at the Maria Manor dining room, but is prepared outside by Services for Seniors, a United Way agency, at the Presbyterian Church./6/

Mr. Richard Nelson, Project Administrator at the Maria Manor, did not feel that the proposed project would impact rents at the Maria Manor, because of the federal rent subsidy program; he did feel that "the greatest impact would be noise of construction and traffic through the area, which would be more damaging."/6/

The Fairway Rent-a-Car business on Lot 11 and the parking facilities on Lots 11, 12 and 20 would be dislocated as a result of the projects' construction. The Fairway Rent-a-Car Business is currently on a month-to-month lease with GHT Associates and would be given 60 days notice to vacate the site prior to the commencement of construction. New and additional parking would be constructed on site as part of the hotel development; this new parking would tend to serve hotel guests rather than previous parking users. Holiday Inn proposes to sublease this parking space; therefore, Fairway Rent-a-Car could have the opportunity to propose on these services. Fairway Rent-a-Car has indicated that they wish to propose on obtaining the garage lease and remaining at the site. Fairway has not determined where they would relocate in the interim construction period should the project be approved./7/ The project sponsors have made no plans to assist in this relocation.

ASSESSED VALUATION, PROPERTY TAXES & REVENUES

Property Tax. Based on preliminary (construction) replacement cost estimates, the fair market value of the proposed Holiday Inn would be about $40.5 million (in 1980 dollars), with an estimated assessed value of $10.1 million. The 805-room hotel would generate between $405,000 and $507,000 total property tax revenues annually./8/ The project would increase the San Francisco tax base by about $9.4 million ($10.1 million less the $703,000 assessed valuation of the existing project site). Assuming the City and

County were to receive the same proportion of property taxes (85%) as in the 1979/80 fiscal year, it would receive between $344,000 and $431,000. The net increase over existing property tax revenues ($35,000) from the project site to the City and County would be between $309,000 and $396,000.

Hotel Tax. A hotel room tax of 9.75% is currently levied by the City and County of San Francisco on gross room rental sales. For 1979-80, the total room tax revenues exceeded $20 million, at the rate of 8.0%; 41% of future revenues are to be used to finance the Moscone Convention Center. Following construction these funds will be used for the Center's maintenance, operation, and lease payments to the Redevelopment Agency (lease revenue is used to pay Yerba Buena bond debt). Over 18% would be paid to the City's General Fund, and the remainder is budgeted for bond debts, low-income housing and the Hotel Publicity and Advertising Fund. Revenues deposited in the City's Hotel Tax Fund are allocated according to City Ordinance 251-78.

Projected total room sale revenues in the first year of operation (for 69% annual occupancy rate and $82 per room per day) for the Holiday Inn would be $16.6 million. At a current (1980) hotel tax rate of 9.75%, the hotel would generate about $1.6 million in hotel tax revenue. As specified by the amended City Ordinance 251-78, and assuming a distribution similar to the 1979-80 fiscal year, hotel tax revenues from the project would be distributed as follows:

George R. Moscone Convention Center Construction (41%)	- $665,000
Candlestick Park bond debts (5.10%)	- 83,000
Yerba Buena Redevelopment Agency low-income housing financing (5.10%)	- 83,000
Hotel Publicity and Advertising Fund (15.0%)	- 243,000
City's General fund (33.8%)	- 548,000
	$1.6 million

Sales Tax. Gross receipts from the hotel-operated food and beverage facilities and from the 2,000 sq. ft. of retail space would generate in excess of $5.4 million (in 1980 dollars), based on operations data provided by the Holiday Inn./1/ Based on analyses of food and beverage revenues at the 5 existing Holiday Inns, food revenues are approximately 25% of annual room

sales and beverage sales at 30% of food sales./1/ This amount would represent an estimated increase of over $344,000 above existing sales tax revenues generated by the existing parking facility ($351,000 less $7,000, see Section III.C, p. 39). The project would generate a net increase in sales tax revenues to the City of over $68,000 and about $29,000 in net revenues to BART./9/

A breakdown of hotel guest expenditures generated by the project is difficult to predict at this time. Based on the most recent estimates (1979) from the San Francisco Convention and Visitors Bureau, the combined tourism expenditures (excluding room, food and beverage expenditures at the hotel) made by hotel guests at the Holiday Inn would average $60 per guest per day (in 1980 dollars)./10/ This figure varies for each hotel and its total convention activity per year. Based on an estimated annual occupancy of 304,000 guests/11/ for the project, the breakdown of expenditures for this project is estimated as follows:

EXPENDITURE	PERCENT OF TOTAL MONEY SPENT/9/	ESTIMATED DOLLAR AMOUNT SPENT PER YEAR (IN MILLIONS)
Restaurants Outside of Hotels & Motels	32.7	$ 6.0
Retail Stores	24.5	4.5
Local Transportation	6.8	1.2
Sightseeing	4.1	0.7
Entertaining	14.6	2.7
Auto: Oil, Gasoline, Service	5.6	1.0
Other Items	11.7	2.1
TOTAL	100.0%	$18.2

These expenditures would create new income to various businesses and to the City. Indirect sales tax revenues are generated from visitor expenditures outside of the hotel, particularly in the purchasing of souvenirs, clothing, publications, and food. Sales tax revenues generated by indirect consumption are based on the following assumptions contained in the San Francisco Planning and Urban Renewal Association report/12/ entitled "Detailed Findings: Impact of Intensive High-rise Development in San Francisco." Percents of sales which are expected to be taxable are:

Restaurants	- 100%	Sightseeing	- 50%
Retail Sales	- 100%	Auto-Related	- 85%
Entertainment	- 50%	Other Items	- 95%
Local Transportation	- 0%		

Based on the projected $18.2 million annual revenues from indirect expenditures, sales tax revenue would total about $1 million; $182,000 in indirect sales tax revenues would go to the City and $78,000 to BART.

Economic estimates are sensitive to a wide range of factors, including energy and transportation costs, unemployment, gas shortages, and strikes. Indicative of this fact, total visitor and convention expenditures increased by 27.1% between 1978 and 1979, while total number of overnite visitors in commercial accommodations within the City increased by 9.9%. For the first half of 1980, average tourism expenditures per visitor are anticipated to have kept place with the national inflation rate. As such, expenditures by project-generated visitors would be above the estimated increase shown above.

Cost and Net Revenues. An increase in general government administrative costs would be expected; the extent of this expense would not be easily identifiable. Most government agencies do not break down their operating and capital expenses on a per unit basis. San Francisco Police Department and Fire Department costs to serve the project would be minimal, since no increase in manpower or equipment is expected. Costs for maintenance, storm drainage, lighting, and cleaning would not be anticipated to be measurably affected as indicated by previous projects of this size. Water and sewer operating costs would be covered by user charges. The project, in itself, would not measurably increase the capital costs for the upgrade of the sewer system currently under construction.

Increased costs would be incurred by the various transit systems in which new employees and guests would ride. Muni currently estimates a system-wide per-paid passenger fare deficit of about $0.45 after the approved 1980 increase to $0.50. About 40% of this fare deficit is made up by the City's property, payroll and franchise taxes. The remaining deficit is made up from local, state, and federal funding./13/ Muni does not anticipate a decrease in

this deficit in the near future because planned improvements such as the Muni Metro system will increase future operating, maintenance, and capital costs in proportion to increased ridership. Muni does expect that the portion of fare deficit covered by local, state, and federal funding will increase, thereby decreasing the portion of the deficit borne by San Francisco property taxpayers./14/

An estimated 680 daily trips would be generated on Muni based on the 1800-room Hilton Hotel employees survey and pedestrian counts taken at the 416-room Holiday Inn at Union Square on Tuesday, 24 July 1979 between 7 a.m. and 6 p.m. (see Table 11, p. 99). These trips breakdown as follows: Holiday Inn employees (290 trips), guests (330 trips) and others attending meetings or the restaurant (60 trips). Assuming that the estimated 680 trips would occur 7 days per week, project-generated trips would result in an annual fare deficit of about $112,000.

Additional project-generated revenues would accrue to the City's General Fund from which Muni receives part of its annual operating budget. A projected $1.1 to $1.2 million of total net annual property, hotel room, and sales tax revenues would be generated from the Holiday Inn to the City's General Fund. This additional revenue would exceed the estimated annual Muni fare deficit attributable to increased ridership by guests and employees.

An estimated 170 daily trips would be generated on BART (see Table 11, p. 99) by Holiday Inn employees (100 trips) and guests (70 trips). At the existing average annual operating deficit per trip of $1.25,/12/ these 170 trips would result in an annual fare deficit of about $78,000. The BART deficit is made up primarily from the 1/2% BART sales tax./13/ The estimated $107,100 of net direct and indirect sales tax revenues accrued to BART from the project would exceed the estimated annual operating deficit attributable to the project.

The Holiday Inn can be expected to be a net fiscal benefit to the City, particularly because of its hotel room, property, and direct sales tax contributions. These tax revenues would be anticipated to offset cost increases to public services (including Muni) for the project.

CUMULATIVE HOTEL DEVELOPMENT EFFECTS

In addition to the proposed 805-room Holiday Inn, approximately 1,410 hotel rooms are proposed for construction in the vicinity of the project site. These proposed projects include: the 410-room addition to the existing Hilton Hotel, to be located at the corner of O'Farrell and Taylor St.; and the 1,000-room Hotel Ramada, to be located at Mason and Ellis St./13/ Total estimated additional rooms (2,215), including the proposed project, would represent about a 12% increase in hotel rooms in San Francisco advertised by the San Francisco Convention and Visitors Bureau and about a 29% increase in hotel rooms in the Union Square hotel district (shown in Figure 17, p. 37).

With the completion of the three proposed hotel projects containing about 2,215 rooms, annual areawide occupancy rates are expected to drop from a high of 84% estimated for 1981/82, to 82% for 1982/83 and to 79% by 1985./15/ Room rates are expected to continue to increase, although the addition of the 2,215 rooms would have a tendency to slow the amount of increase over the projected time frame. The 3 hotels could jointly handle a convention with about 10,000 participants./16/

New hotel construction in the downtown area would strengthen the tourist industry in San Francisco, especially for the convention tourist market. Construction of the 2,215 hotel rooms as proposed, coupled with the 3,000 to 3,500 rooms expected to be added to the City's stock in response to construction of the George R. Moscone Convention Center/15/, would increase the total number of convention participants able to visit San Francisco. According to 1979 estimates provided by the San Francisco Convention and Visitors Bureau, convention participants spend 233% more per capita ($772 per trip) than per capita expenditures ($232 per trip) by other tourist or commercial travelers

visiting San Francisco./10/ These per capita estimates are for all tourist expenditures in San Francisco, including hotel room and food and beverage sales. An increased ratio of convention-tourist business to other tourist business in San Francisco could be expected to generate higher tourist income to the City.

Based on an 80% occupancy rate and an average daily room rate of about $50, the proposed Holiday Inn at O'Farrell and Mason Sts., Hotel Ramada, the Hilton Tower No. 2 addition, the 224-room addition to the Holiday Inn at Civic Center, and construction of a 700-room hotel at Yerba Buena Center would generate an estimated $4.7 million of additional hotel tax revenue at the current rate of 9.75% of gross room rental sales./14/ This amount would represent about 14% of the projected total hotel tax revenue of $32.7 million to be collected in Fiscal Year 1982-83./15/ It should be noted that Holiday Inn projects an average daily room rate of $82 for the project. Ramada's estimated daily room rate also exceeds this $50 estimate by Laventhol and Horwath, Certified Public Accountants. Therefore, the estimated tax income is conservative.

The cumulative effect of construction of the proposed Holiday Inn, Hilton Tower No. 2, and Hotel Ramada would represent an extension of the Union Square downtown hotel district (Retail District) farther into the Tenderloin District of the City. As noted in Sections IV.A, p. 62 and Section IV.B, p. 67, the effect of commercial development of the magnitude proposed could indirectly encourage conversion of residential hotels in the Tenderloin District to transient-tourist hotels. The extent to which residential hotel rooms in the area would convert would depend, in part, on whether any permanent measures are undertaken to control such activity after the hotel conversion moratorium expires in November 1980. Without permanent control measures enacted to replace the moratorium, residential hotel conversion could be expected to continue. Demand for tourist hotel rooms, together with the general enhancement of the area by major hotel construction and an increase of tourist-oriented commercial uses would indirectly lead to increasing property values. Property devoted to smaller residential hotels would come under pressure to convert to tourist hotels to remain economically viable.

Increased residential hotel conversion would reduce the low-income housing stock in San Francisco, and would diminish the ability of low-income and elderly residents living on fixed incomes to find or retain affordable housing in San Francisco. Whether or not a permanent ordinance is adopted to control residential hotel conversion, the general upgrading of the Tenderloin District in the project study area is still expected to influence property values in the area.

NOTES - Economic, Employment and Fiscal Factors

/1/Holiday Inn Inc., U.S. Hotel Division, Richard Bishop, Hotel Architect-Projects Development, personal communication updating "1979 Market Analysis for Holiday Inn-San Francisco-Downtown," 24 June 1980.

/2/Cahill Construction Co., William Cahill, Project Manager, personal communication, 4 September 1980.

/3/Dames & Moore, Robert T. Mott, Principal Economist, personal communication, 22 April 1980.

/4/Department of City Planning, 6 October 1980, "Draft EIR Hilton Hotel Tower No. 2, San Francisco," EE 79.257, p.108.

/5/Holiday Inn Financial District, Mr. Harold Berlo, Innkeeper, personal communication, 16 July 1979.

/6/Maria Manor Hotel, Mr. Richard Nelson, Project Administrator, telephone communication, 22 October 1980.

/7/Fairway Rent-a-Car, Mr. Sami Ladeki, General Manager, telephone communication, 28 March 1980.

/8/Appreciation of land value and escalation of construction costs are expected before the fiscal year 1982; however, estimates are given in constant dollars. Both the low and the high tax estimates assumed the existing tax structure and appraisal of market value based on replacement costs. The low estimate is based on a tax rate of $4 per $100 assessed value and assumes that all existing San Francisco bond debt is retired. Any new bond repayment would be included in the $4 tax rate, which is the maximum composite tax rate allowed under Proposition 13. The high estimate is based on a tax rate of $5, which is the $4.00 maximum composite tax rate plus the $0.97 tax rate for previously approved San Francisco bond debt. The current $0.97 bond tax rate is not expected to be retired until the year 2020. (J. Porter, Chief Accountant, Controller's Office, City and County of San Francisco, telephone communication, 17 April 1980; Dept. of City Planning, September 1980, "Administrative Draft EIR-Hotel Ramada, San Francisco," EE 80.171, pp. 105 and 106).

/9/Department of City Planning, 3 October 1980, "Draft EIR-Hotel Ramada, San Francisco," EE 80.171, p. 106. Distribution of funds based on information provided by D. Cole, Grants Officer for San Francisco Municipal Railway, 28 March 1980 and 17 April 1980.

/10/San Francisco Convention and Visitors Bureau, "1979 Annual Report," 1390 Market Street, San Francisco, CA. 94102, p. 9.

/11/The predicted annual occupancy of 304,000 guests represents an annual occupancy of 69% and a maximum average total occupancy of 1200 guests per day (or 50% double occupancy) for the 805-room project for the opening year. The average length of stay per visitor is estimated at 3.0 days based on the San Francisco Convention and Visitor's Bureau 1979 Statistics Summary.

/12/San Francisco Planning and Urban Renewal Association, June 1975. "Detailed Findings; Impact of Intensive High-rise Development in San Francisco," Final Report, pp. 265-277.

/13/Department of City Planning, 3 October 1980, "Draft EIR-Hotel Ramada, San Francisco," EE 80.171, pp. 99 and 100. Deficit data based on information provided by D. Cole, Grants Officer for San Francisco Municipal Railway, 28 March 1980, and W. Belding, Senior Economist, Bay Area Rapid Transit District, 28 March 1980.

/14/In addition to the Holiday Inn, 3 other hotel projects are currently under EIR review at the Dept. of City Planning, Office of Environmental Review. File numbers of these projects are: Hilton Hotel - EE 79.257; Holiday Inn at Civic Center Addition - EE 79.314; and Hotel Ramada - EE 80.171.

/15/Laventhol and Horwath, 1 March 1979, Projected Hotel Tax Collections for San Francisco, prepared for Roger Boas, Chief Adminstrative Officer, City and County of San Francisco. This report is available for public review at the Department of City Planning, Office of Environmental Review, 45 Hyde Street.

/16/Holiday Inn, Inc. U.S. Hotel Division, Richard Bishop, Hotel Architect-Projects Development, telephone communication, 24 October 1980.

D. URBAN DESIGN FACTORS

ARCHITECTURAL RESOURCES

The proposed project would not involve the demolition or alteration of any structure that has received recognition for architectural merit (see Section III.D., p. 42). The project would surround on 3 sides the Heine Piano Company Building, and on 2 sides the Maria Manor Hotel; neither building was rated in either the Heritage Survey or the Department of City Planning Architectural Survey.

Repeated curved lines have been used to integrate the design and provide visual variety. A curved glass observation deck has been designed for the rooftop area. A curved skylight is proposed over the banquet area. This curved profile would also occur at the entrance lobby to the porte cochere. The proposed precast concrete cladding and tinted glazing would be similar in visual character to the exterior finishes of the existing newer and proposed neighboring hotel complexes, and would generally differ in character from the more detailed and textured older structures in the vicinity.

SITE VISIBILITY

Architecturally, the proposed Holiday Inn would be generally similar in character and scale to the proposed Hilton Tower No. 2 and Hotel Ramada. The high-rise portion of the project in the northern half of the site would be about 300 ft. in height to the roof of the upper level mechanical space, or 20 ft. less than the proposed Hilton Tower No. 2 and the Hotel Ramada, both 320 ft. in height. Building height is determined from ground level at mid-block to the top of the mechanical equipment floor as per Section 102.11 of the Planning Code. In the case of the Holiday Inn, this does not include the observation deck which would increase the height by 24 ft., if included.

As the project would partially surround the existing Maria Manor Hotel, it would generally block views from this structure to the north and west. The

upper floors of the Maria Manor Hotel would overlook the skylight area of the base building of the proposed hotel. The Ellis Street facade would be 52 ft. in height, which places it below the 82 ft. Maria Manor Hotel. At the rear of the Maria Manor Hotel, the project would rise to its full height of 300 ft., thereby blocking views of Nob Hill from all windows on the north side of the Maria Manor. The tower would also reduce the amount of daylight presently entering these northern-most rooms.

The 300-ft. project would tower over the 44-ft. Heine Piano Company building. The project would eliminate views from the 2nd and 3rd floors of the piano building south to Ellis Street and more distant views to the Hallidie Plaza and Market Street. No views would be eliminated to the east and west as these facades do not contain windows. The Holiday Inn tower would surround the Heine building on 3 sides, reducing daylight entering through the rear of the building.

The project would be visible from long-range viewpoints along the Bayshore Freeway (Highway 101), portions of Twin Peaks, the Nob Hill area as well as street level areas in surrounding blocks. From points along the Bay Bridge and the Financial District, the project would not be visible because of existing and proposed high-rise structures. From the Marin vista point at the north end of the Golden Gate Bridge, the project would not be visible due to the presence of Nob Hill. From all long-range viewpoints, the project would be seen as part of the group of high-rise structures of similar height and bulk. Views from Union Square would include upper portions of the tower, thereby cutting off the view of portions of the Hilton Hotel Tower to the west of the project. Views of the downtown area from upper stories of the existing Hilton Hotel Tower would be affected in some instances. The cumulative visual effect of construction of the proposed Hilton Hotel Tower 2 and Ramada Inn would increase the density of visible high-rise structures clustered in the Union Square and surrounding area. Views of the proposed project are shown in Figure 22 p. 81.

VIEW FROM POTRERO HILL

VIEW FROM TWIN PEAKS

FIGURE 22
VIEWS OF THE PROPOSED PROJECT

SUNLIGHT AND SHADOW EFFECTS

Areas of pedestrian activity are generally enhanced by the presence of sunlight. The proposed tower at Mason and O'Farrell Streets would cast shadows on nearby streets and buildings varying with time of day, weather conditions and season of the year. During morning hours, throughout most of the year, the tower would cast shadows to the northwest along Mason and O'Farrell Streets extending as far as the east side of the intersection of Taylor and O'Farrell. During midday hours, throughout the year, the tower would cast shadows to the north and northeast partially shading the storefronts on Assessor's Block 315.

Shadows for the existing site as well as those generated by the proposed project are shown in Figures 23 through 25, pp. 87 to 89, at 8 a.m., noon and 4 pm. for March 21 and September 21, June 21, and December 21, respectively. Construction of the proposed Hotel Ramada would cast shadows on the southern facade of the project and the Maria Manor Hotel and along Ellis Street during the winter at midday. Construction of the Hilton Tower No. 2 would have no effect on shadows at the project.

COMPATIBILITY WITH THE SAN FRANCISCO COMPREHENSIVE PLAN

The Urban Design Element of the San Francisco Comprehensive Plan/1/ provides a basis in City policy for summarizing the urban design implications of the proposed project. A summary of relevant policies and objectives is shown in Table 6, pp. 87 and 88, with the relationship of the project to such policies.

WIND EFFECTS

According to wind tunnel tests/2/ described earlier and contained in Appendix B, p. 206, the project would reduce northwest winds at the northeast (high to moderately high) and southwest (moderately high to moderate) corners of the Mason and O'Farrell Sts. intersection./3/ Windspeed would increase in

front of the Heine building (moderately low to moderate), on the south side of the O'Farrell and N. Fifth Sts. intersection (low to moderate), and near the port cochere exit (moderately high to high). Winds would decrease midblock on N. Fifth St. (moderately low to low) and would be more turbulent.

Under westerly wind conditions, windspeed would increase at the northeast corner of Mason and O'Farrell (moderate to moderately high), in front of the Heine building (moderately low to moderate), at the southwest corner of O'Farrell and N. Fifth Sts. (low to moderate), and at the Ellis St. porte cochere entrance (low to moderately low). Windspeed would decrease at the southeast corner of O'Farrell and Mason Sts. (moderate to moderately low).

Westerly winds near this project would range from "low to moderately high" with increases along Ellis Street with the exception of the southwest corner of the N. 5th and O'Farrell Streets intersection. When evaluated with inclusion of the Hilton and Ramada Inn highrise projects, west winds would increase along Ellis Street and, in most cases, at the Mason and O'Farrell Streets intersection over existing conditions.

Air intake to the Heine Building and Maria Manor Hotel is through windows, with the exception of a laundry/basement vent in the Maria Manor. Air circulation for the Maria Manor would be affected due to the nearness of the western facade of the project. The corner floors would not receive direct sunlight, but light and air would be furnished by a light well between the two buildings. The Heine building would continue to receive air and light through its south elevation windows because of their setback from the project's property line on the upper 2 floors.

NOTES - Urban Design

/1/City and County of San Francisco Dept. of City Planning, August 26, 1971 The Comprehensive Plan - Urban Design, adopted by Resolution No. 6745 of the San Francisco City Planning Commission.

/2/Environmental Impact Planning Corporation, October 1980, "Microclimate Impact Study on the Proposed Holiday Inn-Mason & O'Farrell", San Francisco, CA.

/3/Wind speeds are measured in terms of percentage of the speeds recorded at the San Francisco Weather Station on top of the old Federal Building on U.N. Plaza.

Velocity	Percentage of Reference Windspeed
Low	0-0.19
Moderately low	0.20-0.29
Moderate	0.30-0.49
Moderately high	0.50-0.69
High	0.70-1.00
Very high	>1.00

>greater than

TABLE 6: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE SAN FRANCISCO COMPREHENSIVE PLAN AND THE PROPOSED PROJECT

Applicable Urban Design Policies/a/	Relationship Of The Project To Applicable Policies
Policies For City Pattern	
1. Policy 1 - "Recognize and protect major views in the City, with particular attention to those of open space and water." (p. 10)	The proposed project would block some views to the Downtown area from the upper floors of neighboring highrise structures to the west. Views from highrises to the north overlooking Market Street and Hallidie Plaza would generally not be impaired. Views from sidewalk level of the Downtown CBD and the Bay are presently blocked by intervening structures (see Figure 22, p. 81).
2. Policy 3 - "Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts." (p. 10)	The proposed project would be visible from Twin Peaks and South of Market as part of the downtown skyline. The highest portion of the structure would be similar in scale to the proposed Hilton Hotel Tower No. 2 and Hotel Ramada projects proposed for adjacent sites to the west and south. The proposed project would functionally and visually integrate the project block with the hotel sites proposed for the blocks west and south. The proposed project would join other comparably sized high-rise hotel structures in the Union Square Shopping and Retail Area. Collectively these towers provide the major visual background at the base of Nob Hill and form the border between the Tenderloin and Retail Business Districts (see Figure 14, pp. 31-32, and Figure 22, p. 81).
3. Policy 5 - "Emphasize the special nature of each district through distinctive landscaping and other features." (p. 12)	The planting of deciduous trees around the site perimeter would extend street landscaping typical of the northern-side of O'Farrell Street and of Hallidie Plaza to the project area. Proposed retail shops within the porte cochere would provide pedestrian interest.
4. Policy 6 - "Make centers of activity more prominent through design of street features and by other means." (p. 12)	The porte cochere would develop a grander sense of arrival and departure than would be expected from a curbside entry. Windows on the west side over the porte cochere would be stepped back to provide depth to the glazed second level.
5. Policy 6 - "Respect the character of older development nearby in the design of new buildings." (p. 25)	The proposed project would be consistent in size, scale and architectural treatment with recently built existing and proposed hotel development to the west and south, and would provide a physical and visual contrast between older structures to the north along O'Farrell St. and east along N. 5th St. The base building would be similar in height to the Heine Piano Company building and the Maria Manor Hotel. The uniformity and texture of exterior materials and the curved design details would represent a departure in style and character from some neighboring older buildings.
Policies For Major New Development	
6. Policy 1 - "Promote harmony in the visual relationships and transitions between new and older buildings." (p. 36)	Construction of the U-shaped tower around the existing Heine Piano building, the setback of base building windows, and the design of the porte cochere would breakup the street front facades and reduce the monolithic effect of the highrise. These features provide diversity in scale and would blend with existing building features. The use of a concrete exterior and tinted glass would be neutral and would blend in with existing structures which are variable in color including blues, reds, grays, whites, and tans.
7. Policy 2 - "Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance." (p. 36)	The Hyatt at Union Square, the St. Francis Hotel Tower and the Hilton Hotel Tower presently are the highest structures in the immediate area. The proposed Holiday Inn would be similar in height to these structures and to the adjacent proposed Hilton Hotel Tower No. 2 and Hotel Ramada. Exterior materials and colors would be similar to these structures. The tinted glass and concrete exterior materials would impart medium-to-light color values to the tower, similar to other highrise structures within the area. These hues would shift, depending on the time of day, natural lighting conditions, and reflective sky colors.

TABLE 6: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE SAN FRANCISCO COMPREHENSIVE PLAN AND THE PROPOSED PROJECT (cont.)

Applicable Urban Design Policies/a/	Relationship Of The Project To Applicable Policies
Policies for Major New Development (cont.)	
8. Policy 5 - "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (p. 36)	Height of the building would be comparable to other highrise hotel structures within the area. The 4-story base building would provide a transition between existing low and mid-rise development and the project.
9. Policy 6 - "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (p.37)	Maximum plan dimensions and bulk for the project would be oriented parallel to Mason Street reflecting the character of existing building orientation both along Mason St. (Hilton Hotel) and along N. 5th St. (Barclay and Gates Hotel). Design of the low rise (4-story) base building at the southern half of the site and adjacent to the Maria Manor Hotel would reduce the impact of the building size on the hotel's residents. The use of light colored materials and the U-shape of the tower would reduce the massiveness of appearance.
Policies For Neighborhood Environment	
10. Policy 4 "Design walkways and parking facilities to minimize danger to pedestrians." (p. 55)	Design of the porte cochere for the drop off and loading of guests would reduce danger to pedestrians. Pedestrian - truck interaction would be reduced by loading dock and trash pickup on Level 1. Sidewalk and entries along O'Farrell St. would be set back to improve pedestrian traffic flow.
11. Policy 12 - "Install, promote and maintain landscaping in public and private areas." (p. 57)	Landscaping would be provided in planters & tubs within the porte cochere. Street trees would be provided surrounding the site.
12. Policy 13 - "Improve pedestrian areas by providing human scale and interest." (p. 57)	A sundry-type shop for use by hotel guests and neighboring pedestrians would face onto the porte cochere. There would be a flower kiosk within the porte cochere. Along Mason and O'Farrell Sts., windows would provide pedestrians views to the hotel's lobby.
14. Policy 14 - "Remove and obscure distracting and cluttering elements." (p. 57)	Distracting and cluttering elements such as parking areas and utility lines would be underground and out of public view. Design of signs, directories and other graphics would be controlled with the intent of avoiding garish or otherwise distracting appearances.
15. Policy 15 - "Protect the liveability and character of residential properties from the intrusion of incompatible new buildings." (p. 57)	The setback of the tower from the Maria Manor Hotel lessens intrusion on the older building.

/a/ City and County of San Francisco, 1971, Comprehensive Plan - Urban Design Element, adopted by Resolution No. 6745 of the San Francisco City Planning Commission. (pages as referenced in parenthesis).

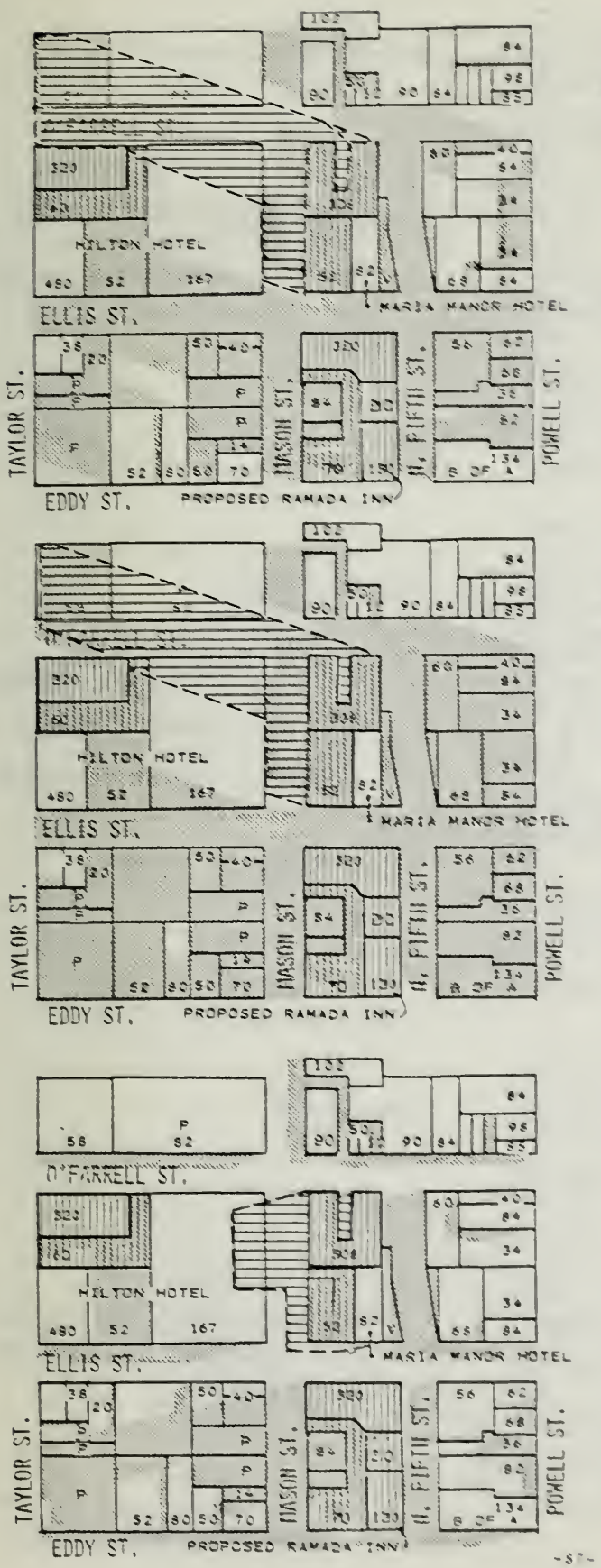
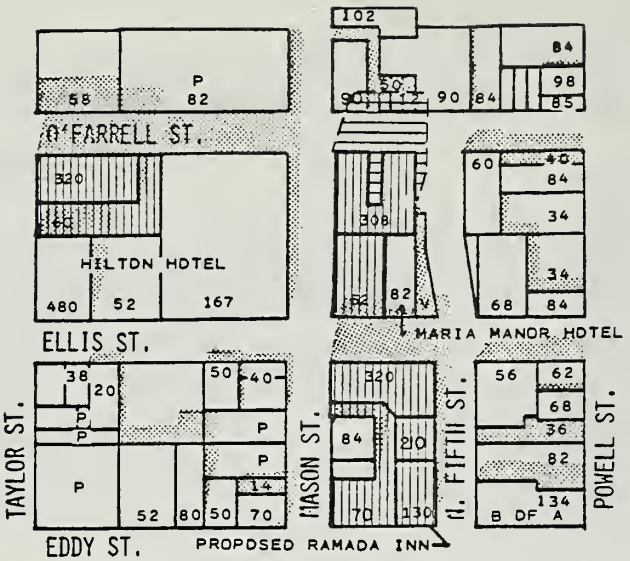


FIGURE 23
PROJECTED SHADOW PATTERNS AT 8 A.M. (STANDARD TIME)

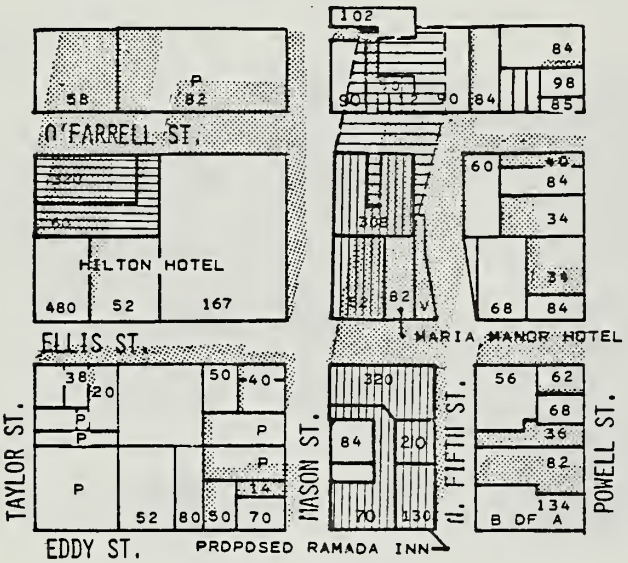


MID-MARCH & MID-SEPTEMBER

NOTE:

EXISTING SHADOWS INCLUDE SHADOWS FOR THE PROPOSED HOTEL RAMADA AND THE HILTON HOTEL TOWER NO. 2.

SHADOWS INCLUDE PERIPHERAL SHADOWS FROM ADJACENT STREET SEGMENTS NOT SHOWN ON THIS DRAWING.



MID-DECEMBER

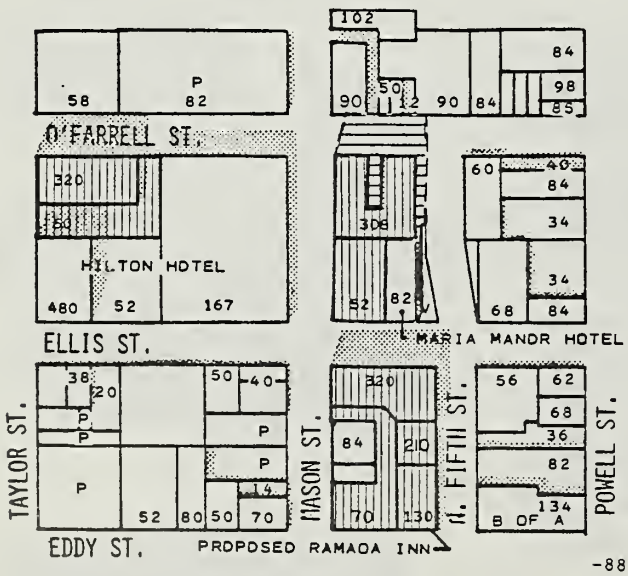
LEGEND:

EXISTING SHADOWS

80 BUILDING HEIGHT (FT.)

PROJECT SHADOW HOLIDAY INN

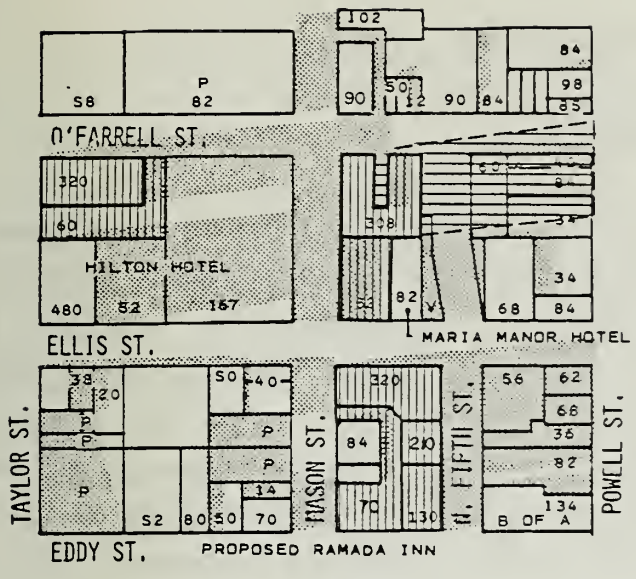
3 HOTELS



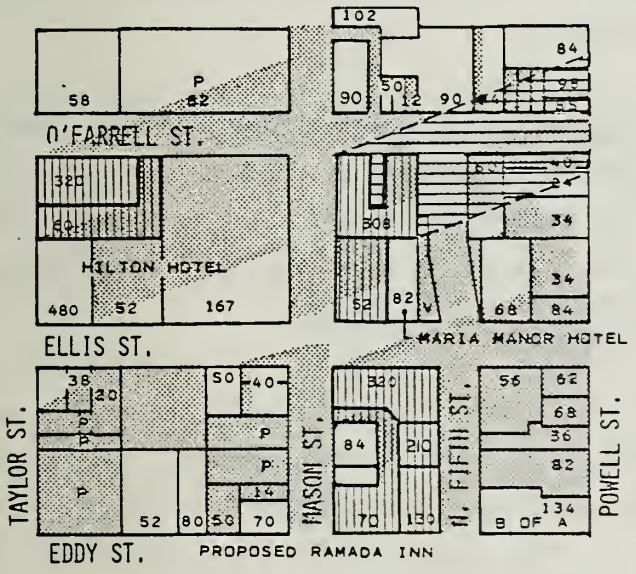
MID-JUNE

FIGURE 24

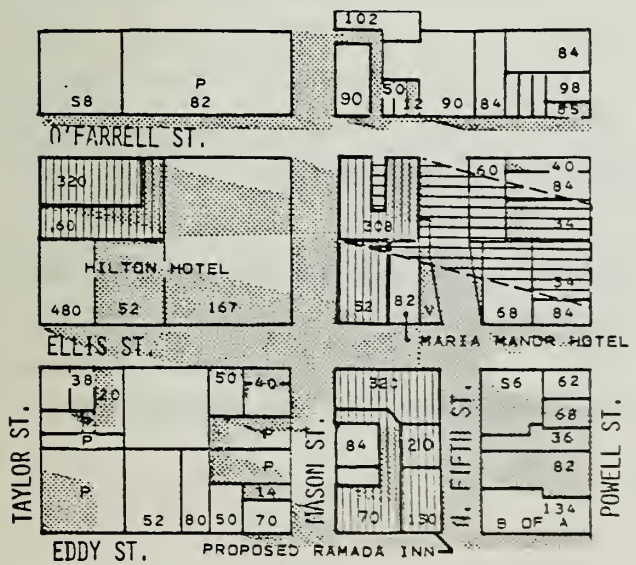
PROJECTED SHADOW PATTERNS AT NOON (STANDARD TIME)



MID-MARCH & MID-SEPTEMBER



MID-DECEMBER



MID-JUNE

NOTE:

EXISTING SHADOWS INCLUDE SHADOWS FOR THE PROPOSED HOTEL RAMADA AND THE HILTON HOTEL TOWER NO. 2.

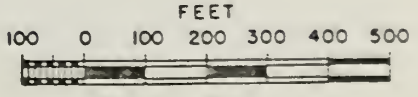
SHADOWS INCLUDE PERIPHERAL SHADOWS FROM ADJACENT STREET SEGMENTS NOT SHOWN ON THIS DRAWING.

LEGEND:

- EXISTING SHADOWS
- 80 BUILDING HEIGHT (FT.)
- PROJECT SHADOW HOLIDAY INN
- 3 HOTELS

FIGURE 25

PROJECTED SHADOW PATTERNS AT 4 P.M. (STANDARD TIME)



E. TRANSPORTATION, CIRCULATION, AND PARKING

EXCAVATION AND CONSTRUCTION IMPACTS

During construction, transportation impacts would result from trucking movements to and from the site during excavation and construction activities. Excavation would generate an average of 3 truck movements per hour over a 2 month period. Post-excavation activity would require truck movements over a period of 19 to 22 months for the delivery of concrete, steel, precast panels, etc. Peak activities are not expected to exceed 3 vehicle movements per hour. Installation of utilities could disrupt traffic; utility connection activities would generally occur during off-peak hours and would be completed within 1-2 months from the start of construction./1/

The transportation impact of increased construction vehicle traffic would be decreased capacities of the access streets and haul routes due to the slower movements and larger turning radii of trucks. Any peak-hour truck traffic (between 7 a.m. to 9 a.m. or 4 p.m. to 6 p.m.) would conflict with peak-hour traffic, particularly at freeway access points.

Exiting and entering trucks would impede regular traffic flow and would block pedestrian movements on the sidewalk. Trucks would generally enter from Ellis Street at the proposed driveway entrance, and exit from either N. 5th or Ellis Streets. Vehicles exiting on N. 5th would proceed east on O'Farrell to Stockton Street and continue south along 4th to Interstates 80 or 280. The majority of trucks would exit westward along Ellis to avoid conflicts with pedestrian traffic in the Union Square area. Truck turn-arounds would occur within the proposed porte cochere or 1st parking level (B-1).

The first 5 months of construction, excavation and foundation work would entail the blocking of portions of sidewalk around the block. At present, the project sponsor is unable to estimate the exact location of the barricade to be built around the excavation. If barricades would have

to be erected beyond the line of the existing sidewalk, they would encroach onto the road surface, thereby eliminating 13 on-street parking spaces. During the morning peak hours, traffic on O'Farrell Street would be reduced from 4 to 3 lanes, eliminating the present 7-9 a.m. bus-only lane along the south curb lane on O'Farrell Street unless parking is restricted along the north curb and the bus lane is moved over 1 lane. Elimination of 1-lane along O'Farrell St. would cause disruption of schedules on the 38- and 38L-Geary buses. Bus traffic would be forced to merge with regular traffic for 1 block. After the first 5 months, the barricade could be relocated to the sidewalk, reducing the sidewalk width around the site's perimeter. The existing effective sidewalk width ranges from 7 to 12 feet, as shown in Table 7.

TABLE 7: WEEKDAY PEDESTRIAN VOLUMES ON SIDEWALKS ABUTTING THE PROJECT SITE--PEAK 15-MINUTE PERIODS*

Sidewalk	Effective Width** (ft.)	One-Hour Volume 4-6 p.m.	Maximum 15-Minutes Rate*** 4-6 p.m.	Maximum 15-Minutes Pedestrian Flow Level+ 4-6 p.m.
N. 5th St.	7	200	0.6	Unimpeded
Mason St.	9	290	0.7	Unimpeded
Ellis St.	12	420	0.8	Unimpeded
O'Farrell St.	11	770	1.6	Unimpeded

* Based on counts taken in July 1980.
** Effective width at midblock; the effective width is determined by the width of the total sidewalk less the width of newspaper racks, trees, utility poles or other obstructions.
*** Pedestrians per foot of effective width of sidewalk per minute.
\+ See Appendix A, Table A-5, p. 205, for a discussion of pedestrian flow levels.

Construction of a barricade encroaching onto the street would require a street use permit. Prior to construction of any barriers, the job superintendent would meet with the Department of Public Works' construction inspector, and representatives from the Police Department and Muni to establish location of the barrier and conditions regarding removal or relocation during construction.

TRAFFIC IMPACTS

The number of people and vehicles generated by the proposed project were estimated through use of a survey of the existing Hilton Hotel on the adjacent block (for further description of the survey, see the Hilton Hotel Tower No. 2 DEIR, EE 79.257). These data were considered to be more valid than data from other Holiday Inns because employees and guests were anticipated to use similar travel modes. Data provided for the Holiday Inn-Financial District showed less use of Muni as many workers live in the Chinatown area. Location of the Airporter terminal near the project would be expected to result in greater use of this service than for more remote existing Holiday Inns.

The observed trip generation rates per occupied room were applied to the proposed project to estimate the number of person and vehicle trips that would be generated by the project. To present the worst case, room occupancy was assumed at 100%. In this study, the reference to trips represents the 1-way person and vehicle trips generated. For example, a taxi entering and leaving the project would correspond to 2 vehicle trips.

The proposed project would contain about 805 rooms and would generate an estimated 1,930 vehicle trips per day and 160 trips during the p.m. peak hour of hotel activity (between 5 and 6 p.m.). A total of 81 parking spaces would be provided for guests. Total trips include taxis, service vehicles and charter and tour buses. These trips break down as follows:

Vehicle Trips by Type	Daily Trips
Automobile	1,110
Taxi	680
Bus	80
Service (Truck)	60

From the Hilton survey, pedestrian trips generated by the project are estimated at 7,730 per day. Of these, 1,010 would occur during the p.m. peak hour of 5 to 6 p.m. These trips do not include vehicle, bus or taxi on- or off-loadings at the porte cochere. Incoming travel to the existing Holiday Inns-Financial District, Union Square and Civic Center is greatest from 5 to 6 p.m. based on weekday surveys on Tuesday, 24 July 1979, and Friday, 31 August 1979, and information provided by the Inn management.

Also from the Hilton survey, it is estimated that 65% of the employee trips would be by public transit, 30% by automobiles - either driven or dropped-off - and 5% would walk. Management personnel would generate the highest proportion of vehicle trips, estimated at 75%; no employee parking would be provided by the project, requiring employee use of off-site parking. Employees would park on the street or in other parking lots in the area.

Projected trip patterns for guests and employees are listed in Table 8, p. 94. Vehicle and pedestrian access patterns to the hotel are shown in Figure 26, p. 95.

Assuming the worst condition for all traffic occurs during the p.m. peak hour, the volume/capacity ratios (v/c ratios) and corresponding levels of service under project traffic volumes for that period are estimated and shown in Table 9, p. 96. Intersection counts were expanded to the 1982 Base Year by an annual factor of 1.8%. This factor was developed in the 1970 Downtown Traffic and Parking Survey made by the San Francisco Department of Public Works. Existing conditions were based on traffic volume data obtained from the City's Department of Public Works, Bureau of Traffic Engineering, and traffic counts made by Dames & Moore and John J. Forristal on weekday dates in 1979 and 1980. Daily and peak-hour 1980 traffic volumes in the vicinity of the project are shown in Table 10, p. 97. Levels of Service would change

TABLE 8: ESTIMATED 24-HOUR WEEKDAY TRAVEL GENERATED BY THE HOLDAY INN

EMPLOYEES

Area of Residence	%	1-Way Person Trips Total	Auto	Transit/a/	Walk/b/
San Francisco	68	490	140	330	490
East Bay	13	90	30	60	90
Peninsula	14	100	30	70	100
North Bay	5	40	10	30	40
		720	210	490	720

GUESTS

Area of Trip Origin or Destination	%	Total	Auto/c,e/	Transit/a/	Walk/d/
San Francisco	70	8,140	1,390	770	5,980
East Bay	6	700	390	220	90
Peninsula	20	2,330	680	770	880
North Bay	4	470	310	100	60
		11,640	2,770	1,860	7,010

/a/Trips made by transit would typically begin as pedestrian trips from the hotel.

/b/Five percent of San Francisco residents assumed to walk to work; no employees to park in the hotel garage.

/c/Includes taxis.

/d/Pedestrian trips do not include trips to vehicles parked on nearby streets.

/e/Assumed vehicle occupancy - 1.5 for taxis, 1.6 for autos.

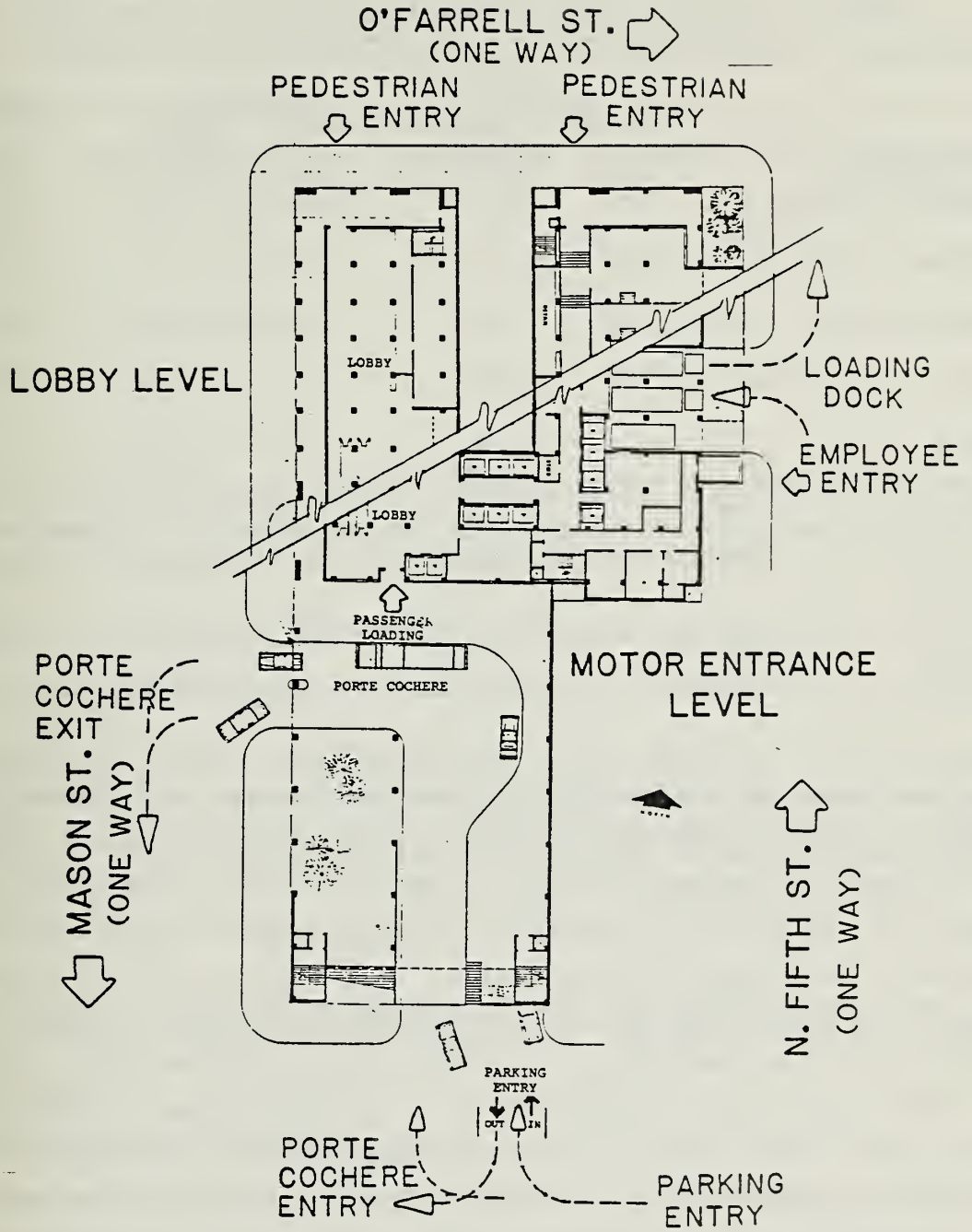


FIGURE 26

ACCESS PATTERNS AT THE PROJECT SITE

TABLE 9: PROJECTED 1982 VOLUME/CAPACITY RATIOS AT P.M. PEAK HOUR*

Intersection	EXISTING V/C** Ratio	EXISTING Level*** of Service	1982 BASE V/C Ratio	1982 BASE Level of Service	1982 BASE & PROJECT V/C Ratio	1982 BASE & PROJECT Level of Service
O'Farrell - Mason	0.57	A	0.59	A	0.61	B
O'Farrell - N. 5th St.	0.52	A	0.54	A	0.54	A
Ellis - Mason	0.76	C	0.78	C	0.82	D
Ellis - N. 5th St.	0.61	B	0.63	B	0.65	B

* The single peak hour during the peak traffic period from 4-6 p.m.

** This is the ratio of the projected volume to service volume at Level of Service E. See Appendix A, Table A-2, p. 200, for description of V/C Ratio.

***Level of Service (see Appendix A, Table A-2, p. 200, for a discussion of LOS).

from Level 'C' to Level 'D' at the intersection of Mason and Ellis Streets, and from Level 'A' to Level 'B' at the intersection of O'Farrell and Mason Streets. The main lobby entrance would be via the porte cochere, with vehicle entry from Ellis Street and exit to Mason Street. Autos, taxis and buses would use the Ellis St. entrance. Most passenger on-and off-loading is planned to take place off the street. The entrance to the parking garage would be on Ellis Street east of the entrance to the porte cochere.

The service level designations at the O'Farrell Street intersections with Mason and N. Fifth Streets can be misleading. Traffic volumes are relatively low and the number of lanes sufficient in the intersection for traffic Level of Service "A". However, due to poor traffic flow at the intersection of Powell and O'Farrell Streets, one block east of project site, congestion results in the backup of traffic through the N. Fifth and Mason Street intersections at times during the afternoon. By definition (Highway Capacity Manual, Transportation Research Board, 1965, see Appendix A, Table A-2, p. 200) the N. Fifth and Mason Street intersections are operating at Level of

TABLE 10: ESTIMATED 1980 VEHICLE TRAFFIC VOLUMES IN THE VICINITY OF THE PROJECT

Street	Section	24 Hour/a/	Peak Hour/b/	Max. 8 Hours
N. 5th	Market-O'Farrell	7,500	600	4,280
Mason	Market-Post	5,700	460	3,250
Taylor	Market-Post	10,700	890	6,100
Market	4th - 7th	8,800	750	5,010
Turk	Taylor-Jones	6,200	500	3,530
Eddy	N. 5th-Jones	5,700	520	3,250
Ellis	Stockton-Jones	12,600	990	7,190
O'Farrell	Stockton-Jones	11,300	960	6,440
Geary	Powell-Jones	14,000	1,120	7,980

/a/The daily traffic volume data and maximum eight-hour counts were derived from historical data for 1976 and 1977 obtained from the San Francisco Department of Public Works, Bureau of Traffic Engineering, modified along sections of N. 5th, Mason, Ellis and O'Farrell Sts. by traffic counts made by Dames & Moore and John J. Forristal, Friday, 20 July 1979, Tuesday, 19 February 1980, Thursday, 21 February 1980, and Thursday, 28 February 1980.

/b/Peak hour traffic counts were based on manual intersection count data for the intersections of O'Farrell at Mason and N. 5th Sts. and Ellis at Mason and N. 5th Sts. Peak hour counts represent single peak hour counts taken between 4-6 p.m.

Source: John J. Forristal, Traffic Consultant

Service "F", even though -- on the basis of analysis of other intersections in the vicinity -- they could handle unrestricted flows of Service Level "A" or better.

Two buses could be accommodated in the porte cochere; if this number is exceeded, an additional bus could queue on Ellis Street in front of the Maria Manor Hotel, where loading and unloading may take place. Discharged passengers would cross traffic entering and exiting the garage. Taxis would also queue on Ellis Street in this same area, and work around any buses which may be loading or discharging passengers. Since Mason Street is 1-way southbound, no bus loading or unloading could take place on that street but taxi queuing could. Passengers exiting from the front seat or the rear passenger side of taxis or autos would have to do so into a traffic lane, which could be unsafe.

The 3 truck loading bays would have access from N. 5th Street. Waiting trucks would have to queue along either curb of N. 5th Street until space is available. Trucks backing in would block the N. 5th St. approach to O'Farrell St. while making this manuever. Trucks exiting would have to enter the left northbound lane and turn right onto O'Farrell St. Both of these movements could cause some congestion; however, their occurrance during the p.m. peak hour would be minimal because of service vehicle scheduling characteristics. The loading bays are tentatively set at 45 ft. in depth, which would handle typical truck sizes expected to make deliveries.

TRANSIT IMPACTS

Transit trips generated by the project are estimated at 2,350 (1-way) trips per day and 520 trips for the p.m. peak hour, as shown in Table 11, p. 101. The use of the cable car and BART cars by guests would be expected to be higher than by residents because these transit systems are attractions. Over 90% of the cable car use generated by the guests is expected to occur in non-peak periods and would not conflict with the general work-home trips. Up to 360 new jobs would be created by this project, and it is expected that 36% of the employees, or 130 persons, would use the Municipal Railway facilities during the workday peak periods.

Existing (1980) transit ridership and capacities are listed in Table 12, p. 101. Transit lines in the vicinity of the project area are indicated in

TABLE 11: PERSON TRIPS BY TRANSIT

	Facility	24 Hour (1-way)*		PM Peak Hour (1-way)*	
		Trips	% of All Transit Trips	Trips	% of All Transit Trips
Guests**					
	Cable Car	290	16	25	9
	Airporter	360	20	80	29
	BART	70	4	10	3
	Tour Bus	1,040	58	160	57
	Muni-Other	40	2	5	2
		1,800	100	280	100
Employees**	Muni	290	59	130	56
	BART	100	21	50	22
	Other	100	20	50	22
		490	100	230	100
Other+ (Restaurant, Meeting, etc.)	All	60		10	
	Totals	2,350		520	

* 1-way trips include both inbound and outbound trips; estimates are valid to ± 10%.

**Modal split for guest and employee trips is based on a survey of guests and employees at the Hilton Hotel, (see Draft EIR-Hilton Hotel Tower No. 2 EE 79.257, p. 107, for details of this survey and manual counts of trip-end generations made at the existing Hilton Hotel on Monday and Tuesday, 3 and 4 March 1980.)

+ Based on estimates provided by Mr. Harold Berlo, Innkeeper, Holiday Inn-Financial District, personal communication, 16 July 1979. Conventions attended concurrently at the Hotel Ramada, Hilton Hotel, St. Francis Hotel and the project by a large number of Bay Area residents would be expected to result in further increases in transit use (see discussion Section IV.E, p. 117).

Figure 27, p. 102. Peak-hour ridership of several transit lines would approach capacity by 1982, as shown in Table 13, p. 103; the increase from the project is estimated at 1% or less for the 4-6 p.m. period. One exception would be use of the Airporter, where Holiday Inn guest trips would add an estimated 22% to the 1982 volumes. The Airporter service has indicated that they would expand service to provide the required capacity for the 3 hotels and other future developments within the Downtown area./3/ If such an increase was not instituted by the start-up of operations at the 3 hotels, during peak travel periods, patrons would have to wait for the next available bus--a wait of 15 minutes during the peak hours.

Transit impacts have been calculated on the basis of 100% occupancy for the project. Worst case impacts for transit and traffic would occur when there is a large convention at all 3 proposed hotels and the nearby St. Francis Hotel. Attendance by Bay Area residents who don't stay at the hotel, would further increase impacts on transit and pedestrian flows. The extent of these impacts is evaluated in Section IV.E, p. 115.

Traffic departing from the Ellis Street garage exit would turn right to merge with the westbound traffic flow. Some disruption would occur for both entering and leaving auto traffic when it is forced to wait in the street until an adequate gap is available in the pedestrian traffic stream, particularly during the noon-1 p.m. and 4-6 p.m. peak pedestrian periods. Exiting cars waiting for pedestrians would not affect Muni. Conflicts with traffic, including Buses 25 and 31, would occur during entrance and exit activities from the porte cochere. Delays would be expected to be of less than 2 minutes under peak traffic conditions based on p.m. peak hour observations of exit activities at the existing 190 Ellis St. parking lot.

PARKING IMPACTS

The project would eliminate an existing 80 stall parking lot. This would increase the demand on the other off-street spaces surveyed in the surrounding area shown in Figure 19, p. 49. The reduction of 80 stalls from

TABLE 12: TRANSIT RIDERSHIP AND CAPACITY DURING PEAK HOURS IN 1980/a/

	Riders	Capacity	% of Capacity
Municipal Railway/b/	15,900	17,400	91
BART/c/	8,840	8,103	84 (a.m.) & 109 (p.m.)
AC Transit	9,600	11,300	85
SamTrans	1,000	1,250	80
Southern Pacific	7,000	10,000	70
Golden Gate Coach	6,200	6,900	90
" " Ferry	1,370	2,100	65
Airporter	300	400	75
Harbor Carriers	430	700	61
Lorries Travel & Tours/c/	40	50	80

NOTES:

/a/Ridership and capacities reflect peak direction only (outbound). Peak travel for all systems occurs between 4-6 p.m. Capacities represent maximum loads, including standees.

/b/Lines: J, K, L, M, N, 5, 6, 7, 8, 9, 11, 12, 14, 14L, 14X, 16, 25, 30, 33, 38, 38X, 59, 60, 66, 71, and 72 (not including cable cars). Muni ridership reflects 1982 projections by the Department of City Planning, Transportation Section, June 1980, "Guidelines for Environmental Evaluation of Transportation Impacts," Attachment 3. 1980 data is not presently available. Note: The Department of City Planning has discovered an error in their numbers, which will be corrected in the FEIR.

/c/BART capacity is considered to be 130% of the seat number.

/d/On call to hotels

Data Sources

Agency	Personnel	Date
BART	Ward Belding (Senior Economic Analyst)	24-27 October 1980
AC Transit	Offices of A. Winkler (Transportation Planner) & W. Robinson (Transportation Engineer	16 April 1980
SamTrans	L. Stuek (Supervisor of Program Development)	16 April 1980
Southern Pacific Railroad	F. Pera (Manager - Commuter Traffic)	21 February 1980
Golden Gate Transit	A. Zahraodnrk (Transportation Planner)	21 February 1980
Harbor Carriers, Inc.	C. Hogan (Dispatcher)	21 February 1980
Airporter	J. Leonoudakis (Owner)	21 February 1980
Lorries	T. Ruiz (Manager)	21 February 1980

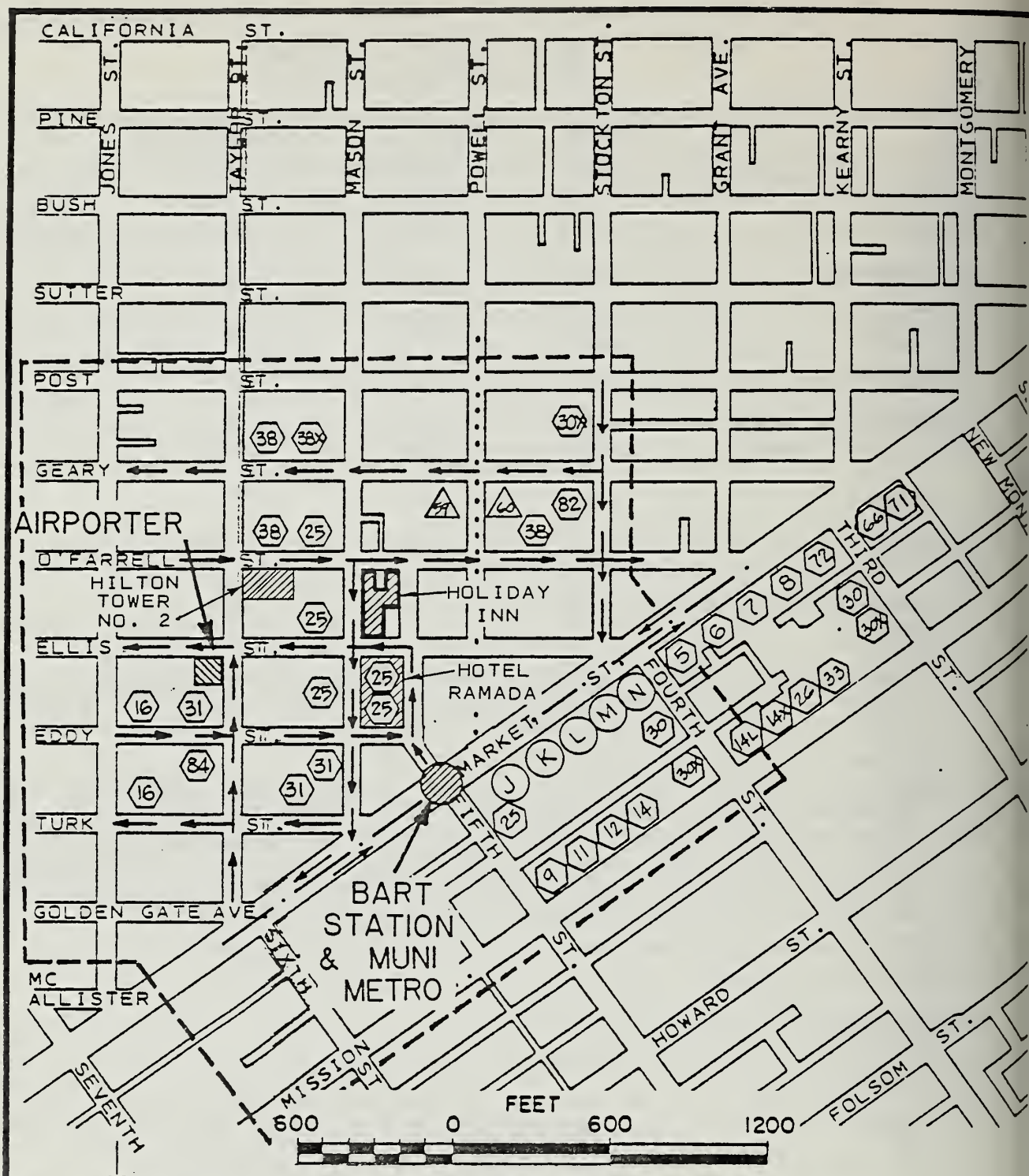


FIGURE 27

TRANSIT LINES IN THE PROJECT VICINITY

SOURCE: SAN FRANCISCO MUNICIPAL RAILWAY, FEBRUARY, 1979

LEGEND:

- STREET CAR & MUNI METRO
- BUS
- CABLE CAR
- STUDY AREA BOUNDARY

TABLE 13: 1982 PROJECTED TRANSIT CHARACTERISTICS - P.M. PEAK-HOUR OUTBOUND ONLY

Agency	Existing (1980) Ridership	Existing (1980) % Capacity	1982 Base Ridership	1982 Base % Capacity	1982 Base + Project Ridership	1982 Base + Project % Capacity	1982 Base + Project % Increase***
Muni	--	--	15,900	91*	16,030	93	0.8
BART	8,840	109	9,200	108+	9,280	109	0.9
AC Transit	9,600	85	10,900	96	10,950	97	0.5
SamTrans	1,000	80	1,300	87**	1,310	87	--
SPRR	7,000	70	8,000	80	8,010	80	--
Golden Gate							
Motor Coach	6,200	90	7,100	103	7,110	103	--
Ferry	1,370	65	1,600	76	1,610	76	--
Airporter	300	75	320	80	390	98	22.0
Harbor							
Carriers	430	61	500	71	510	72	2.0

* Muni projections through 1982 by the Department of City Planning, Transportation Section, June 1980, "Guidelines for Environmental Evaluation of Transportation Impacts," Attachment 3. Note: The Department of City Planning has discovered an error in their numbers which will be corrected in the FEIR.

Lines include J, K, L, M, N, 5, 6, 7, 8, 9, 11, 12, 14, 14L, 14X, 16, 25, 30, 33, 38, 38X, 66, 71 and 72. Does not include cable cars.

** SamTrans 1982 capacity assumed to increase by 20% as per telephone communication with Mr. M.L. Stuek, 16 April 1980.

***Percent increase in ridership over 1982 Base Year; peak-hour ridership on the Powell St., cable car lines would increase by about 2.6% to about 87% of capacity.

\+ BART 1982 capacity assumed to increase to 8,500 as per telephone communication with Mr. Ward Belding, Sr. Economic Analyst, on 27 October 1980; capacity is considered to be 130% of seat number.

the 4,300 non-rented spaces identified by the parking survey (see Appendix A, Table A-3, p. 201) represents a loss of about 2% in the available off-street parking space in the project vicinity. The elimination of on-street parking spaces on Ellis,.Mason and N. Fifth Sts. would be required to accommodate project-oriented vehicles.

The project would provide 81 off-street parking spaces for guests. Assuming 27% of the guests would have autos and 80% of those would wish to park at the hotel, based on a survey of the adjacent Hilton Hotel, there would be a demand for 250 spaces, or a net deficit of 170 spaces. Appendix A, Table A-3, p. 201, identified 550 vacant off-street spaces available during the weekday and 1,340 vacant spaces for the weeknights near the project site. Employee parking would create a further demand for off-street parking; 100 (about 30%) of the employees are estimated to use a car - either by driving or as a passenger - and 50 (50%) of these employees would use off-street parking. From the Hilton Hotel survey, it is estimated that no more than 50 off-street spaces would be required for employees, with the remainder using on-street parking. Nighttime employees (11 p.m. - 7 a.m. shift) would be expected to use on-street parking when available in the immediate area. On-street parking is assumed to be available at this time within several blocks of the project. If on-street parking is not available, employees would park off-street where 1,340 weeknight parking spaces have been identified.

PEDESTRIAN IMPACTS

Pedestrian flow level descriptions are listed in Appendix A, Table A-5, p. 205. Pedestrian counts and flow levels for the peripheral streets are shown in Table 14, p. 106. Also shown in Table 14 are projected flow levels under estimated pedestrian traffic from the project. Pedestrian flow is projected to be "impeded" along O'Farrell and Mason Streets but would remain "unimpeded" along N. 5th and Ellis Streets. Under "impeded" flow conditions, some selection of walking speed could be made but conflicts would occur. Under "unimpeded" flow conditions, minor conflicts may arise from time-to-time, as defined in Appendix A, Table A-5, p. 205.

Conflicts between vehicles and pedestrians at the vehicle access points to the project would be anticipated, particularly at the service vehicle docks where trucks back in. It is estimated that there would be a total of 50 trips by delivery trucks per day, generally occurring between 7-11 a.m. Pedestrian use of N. Fifth St. is presently "unimpeded." Pedestrian congestion or conflicts from service vehicles or vehicles exiting the parking garage onto Ellis Street would be several seconds in duration, with the projected pedestrian flow level remaining "unimpeded."

CUMULATIVE IMPACTS

Other pending developments in the project vicinity which would have an impact on traffic, parking, and transit facilities include two proposed new hotels adjacent to the site:

> The Hilton Hotel Tower No. 2 - located at the corner of Taylor and O'Farrell Streets and consisting of 410 rooms and approximately 150 new employees. (for further information refer to the Dept. of City Planning, "Draft EIR - Hilton Hotel Tower No. 2", EE 79.257).
>
> The Hotel Ramada - bounded by Ellis, Eddy, Mason and N. 5th Streets and consisting of 1,000 rooms and approximately 615 new employees. (for further information refer to the Dept. of City Planning, "Draft EIR - Hotel Ramada", EE 80.171).

Construction Impacts. Construction of barricades along the north (for Holiday Inn) and south (for Ramada) curbs of Ellis Street between N. 5th and Mason Streets would eliminate 8 on-street parking and loading spaces, but would not eliminate any traffic lanes. Construction of barricades along the south curb of O'Farrell Street between N. 5th and Taylor Streets and along N. 5th and Mason Streets adjacent to the project would eliminate 13 parking and 5 loading spaces along these curbs. Simultaneous construction of the 3 projects would result in a loss of up to 10% of the existing metered on-street parking spaces within the surrounding area. Construction of the project simultaneously with the Ramada Inn construction would result in a loss of 230 off-street parking spaces or approximately 7% of the existing spaces in the immediate project vicinity. Traffic congestion would result in a delay in transit schedules. Barricades would be constructed to allow for pedestrian travel on all sides of the projects.

TABLE 14: EXISTING AND PROJECTED PEDESTRIAN FLOW LEVELS FOR THE PROJECT AREA

Street	Pedestrians 4:30 - 5:30 p.m. Per Hour	Effective Sidewalk Width-FT.	Maximum 15 Minutes Rate*	Maximum 15 Minutes Flow Level**
EXISTING (1980)				
O'Farrell	770	11	1.6	Unimpeded
Ellis	420	12	0.8	Unimpeded
Mason	290	9	0.7	Unimpeded
No. 5th St.	200	7	0.6	Unimpeded
EXISTING PLUS PROJECT (1982)				
O'Farrell	1,180	11	2.4	Impeded
Ellis	720	12	1.3	Unimpeded
Mason	900	9	2.2	Impeded
No. 5th St.	300	7	1.0	Unimpeded

* Pedestrians per foot of effective sidewalk width per minute.

**Pushkarev, Boris and Jeffry M. Zupan, Urban Space for Pedestrians, Cambridge, MA., MIT Press, 1975. See Table A-5, p. 205, for a description of flow level.

Traffic Impacts. Based on the survey of the existing Hilton Hotel, vehicle and transit trips were estimated for all hotels. Assuming the trip regimens for the 3 hotels would be similar to those of the existing Hilton Hotel, the estimated trips for each project would be as follows:

Hotel	Daily Trips	P.M. Peak Hour
Ramada Inn	2,400	200
Hilton Hotel Tower No. 2	980	80
Holiday Inn	1,930	160

Table 15, p. 108, shows cumulative traffic volumes for the 3 hotels (Holiday Inn plus 2 other hotels) for the year 1982. The largest increase of 22% in traffic is projected for Mason Street since the exit from the Holiday Inn porte cochere and taxi drop-offs at the Hilton Hotel would occur there. The volume/capacity ratios for the nearby intersections are shown in Table 16, p. 109. The Level of Service at the intersections of Mason and Ellis Streets and Market and Sixth Streets would be lowered from Level 'C' to Level 'D' as a result of increased traffic congestion. Other intersections in the area would remain at Level 'B' or better. Again, note that the intersections on O'Farrell St. can intermittantly operate at Level 'F' as traffic backs up from the Powell St. intersection.

The total number of charter and tour buses generated by each hotel at 100% occupancy is estimated as follows:

Hotel	Charter	Tour	Total
Hotel Ramada	30	20	50
Hilton Tower No. 2	10	10	20
Holiday Inn	30	20	50
	70	50	120

Because of the proximity of the 3 hotels, there may be some overlap in tour buses, since 1 bus may serve 2 or more hotels. Of the 120 buses daily (240 trips), 20% or about 50 trips are projected for the hours between 5-6 p.m. Over 50% of these would be tour buses. The effect of these bus trips has been evaluated and included in the Table 15, p. 108, vehicle volumes.

TABLE 15: PROJECTED CUMULATIVE VEHICLE VOLUMES

Street	1982 Base			1982 Base + Other Hotels				1982 Base + Other Hotels + Holiday Inn			
	24 Hour	Peak Hour*	Peak 8 Hour	24 Hour	Peak Hour	Peak 8 Hour	% Increase Peak Hour**	24 Hour	Peak Hour	Peak 8 Hour	% Increase Peak Hour***
O'Farrell +	11,700	990	6,670	11,920	1,010	6,790	2	12,170	1,030	6,940	2
Ellis +	13,100	1,030	7,450	13,640	1,070	7,770	4	13,980	1,100	7,830	3
N. Fifth ++	7,800	600	4,430	8,090	620	4,610	3	8,160	630	4,650	2
Mason ++	5,900	480	3,370	6,470	530	3,690	10	7,380	600	4,130	12

* Single Peak Hour between 4 and 6 p.m.

**Percent increase over 1982 base traffic volume

***Percent increase over 1982 base + other hotels

+Volumes for Mason to N. 5th Sts.

++Volumes for O'Farrell to Ellis Sts.

TABLE 16: PROJECTED CUMULATIVE VOLUME/CAPACITY RATIOS AT P.M. PEAK HOUR*

Intersection	1982 Base V/C Ratio**	1982 Base LOS***	1982 Base + Other Hotels V/C Ratio**	1982 Base + Other Hotels LOS***	1982 Base Project + Other Hotels + Holiday Inn V/C Ratio**	1982 Base Project + Other Hotels + Holiday Inn LOS***
Mason-Ellis	0.78	C	0.83	D	0.85	D
O'Farrell - N. Fifth	0.53	A	0.54	A	0.56	A
Ellis - N. Fifth	0.63	B	0.66	B	0.68	B
O'Farrell - Mason	0.59	A	0.62	B	0.63	B
Market - Fourth	0.51	A	0.53	A	0.55	A
Market - Fifth	0.47	A	0.48	A	0.49	A
Market - Sixth	0.76	C	0.78	C	0.79	C
Market - Seventh	0.56	A	0.57	A	0.57	A

* The single peak hour during the peak traffic period from 4-6 p.m.

** This is the ratio of the projected volume to service volume at Level of Service E. See Appendix A, Table A-2, p. 200, for a discussion of V/C Ratio.

***Level of Service (see Appendix A, Table A-2, p. 200, for a discussion of LOS).

Service vehicle trips to the 3 hotels would total about 140 per day with less than 5% of the service trips occurring during the peak traffic hour due to existing teamsters' schedules. Because of the locations of the 3 hotels' service bays, about 50% of all trips must pass through the intersection of Ellis and Mason Sts. Based on data provided by the Holiday Inn-Financial District/4/, the peak hour for service vehicles is from 7-8 a.m., with about 10 vehicle trips during this hour. Service vehicles would cause lane blockages during docking maneuvers and during queuing while waiting for an available dock space.

Transit Impacts. Table 17, p. 111, lists the cumulative impacts on p.m. peak hour outbound transit projected for the 3 hotels. Most public transit ridership would be from guests estimated at 4,950 trips daily and 780 trips (combined inbound and outbound trips) during the peak p.m. hour; about 58% of daily trips would be by charter or tour bus, 19% by the Airporter, 16% by cable car, and 4% by BART. Employee transit ridership for the 3 hotels is estimated at 1,510 trips daily and 630 trips during the peak p.m. hour.

During the p.m. peak hour, the demand on individual routes would vary from less than seated capacity to total capacity. Certain Muni routes would experience loadings greater than the average of 94% shown in Table 17, p. 111, for the 1982 base plus the 3 hotels. The loadings shown in Table 17, p. 111, are the results of averaging ridership of full vehicles with partially empty vehicles, thus equalizing the loads over the 1-hour period. With the exceptions of Golden Gate Transit bus service and BART, all transit systems would operate below capacity with construction of the 3 hotels during the p.m. peak transit hour. Individual transit vehicles would continue to exceed their capacities in some instances during the peak transit hour causing a delay to passengers forced to wait for the next available vehicle. It is not possible to quantify the extent to which peak of the peak conditions would occur on Muni lines because the bunching of transit vehicles varies from day-to-day and line-to-line.

Agency	1982 Base Ridership	1982 Base % Capacity	1982 Base + Other Hotels Ridership	1982 Base + Other Hotels % Capacity	1982 Base + Other Hotels % Increase*	1982 Base + Other Hotels + Holiday Inn Ridership	1982 Base + Other Hotels + Holiday Inn % Capacity	1982 Base + Other Hotels + Holiday Inn % Increase**
Muni***	15,900	91	16,140	93	1.5	16,270	94	0.8
BART	9,200	108++	9,330	110	1.4	9,390	111	0.6
AC Transit	10,900	96	10,930	96	0.3	10,960	97	0.3
SamTrans	1,300	87	1,320	88	1.5	1,330	89	0.8
SPRR	8,000	80	8,020	80	0.3	8,030	80	0.1
Golden Gate								
Motor Coach	7,100	103	7,100	103	—	7,110	103	0.1
Ferry	1,600	76	1,600	76	—	1,610	77	0.6
Harbor Carriers	500	71	500	71	—	510	73	2.0
Airporter	320	80	450	112	41	530	132	18

* Percent increase in ridership over 1982 Base Year.

** Percent increase in ridership over 1982 Base Year + Other Hotels; minor discrepancies in values (less than 2%) may appear from values shown in the Ramada (EE 80.171) and Hilton Tower No. 2 (EE 79.257) Draft EIRs due to rounding-off of trips with the exception of BART capacities which have been updated.

***Muni projections through 1982 by the Department of City Planning, Transportation Section, June 1980, "Guidelines for Environmental Evaluation of Transportation Impacts," Attachment 3.

Lines include: K, L, M, N, 5, 6, 7, 8, 9, 11, 12, 14, 14L, 14X, 16, 25, 30, 33, 38, 38X, 66, 71, and 72. Excludes cable cars.

+ Estimates are valid to ± 10%.

++ BART 1982 capacity assumed to increase to 8,500 as per telephone communication with Mr. Ward Belding, Sr. Economic Analyst, on 27 October 1980; capacity is considered to be 130% of seat number.

Addition of traffic for the 3 hotels would add to congestion on some streets outside the immediate project area, resulting in further impacts on transit scheduling. Turn activities for autos, taxis and buses entering, leaving or stopping off at curbside could result in transit delays until such conditions are resolved.

Pedestrian Impacts. Cumulative pedestrian traffic from the 3 hotels would generally be to the areas northeast and southeast of the sites to stores, restaurant, and offices along Union Square and Market Street and to the Moscone Convention Center. Peak pedestrian period would be between 5-6 p.m. based on operations data provided by Holiday Inn/4/ and pedestrian counts made at the Holiday Inn at Union Square on Tuesday, 24 July 1979 from 7 a.m. to 6 p.m.

The transportation impacts analysis of the Moscone Convention Center (S.F. Department of City Planning, 1978, "Final EIR for Yerba Buena Center," EE 77.220) indicated the expectation that 80% of the patronage for convention events would come from Downtown/Northeast San Francisco. About 15% of the trips for these events are expected to be pedestrian trips. In the afternoon, events in its Exhibit Hall and Meeting Room Complex are expected to discharge 8,000 trips as exiting vehicular and pedestrian traffic during the peak period between 4:00 and 6:00 p.m., loading the intersections along Market Street in the area of the Center with up to 1,200 additional pedestrian trips. Daily pedestrian traffic from the 3 hotels along Market Street could increase by an estimated 7% due to the Moscone Center. The pedestrian flow levels for the 3 hotels at 100% occupancy during the p.m. peak hour are shown in Table 18. All sidewalks adjacent to the Holiday Inn would be at "impeded" flow or better.

TABLE 18: CUMULATIVE PEDESTRIAN IMPACTS - 4-5 P.M. PEAK PERIOD

Sidewalk	Effective Width	Number of Pedestrians: Existing	Cumulative Addition	Total	Rate*	Maximum 15 Minutes Flow Level*
N. Fifth St.	7	200	540	740	2.3	Impeded
O'Farrell St.	11	770	790	1,560	3.2	Impeded
Mason St.	9	290	700	990	2.4	Impeded
Ellis St.	12	420	500	920	1.7	Unimpeded

* Pedestrians per foot of effective sidewalk width per minute

**Per Pushkarev - See Table A-5 p. 205.

Parking Impacts. A long-term effect of the 3 hotels would be a reduction in the amount of long-term, off-street parking; this is consistent with Policy 4 of the Revisions to the Transportation Element of the Master Plan Concerning Parking./5/ Master Plan policies discourage the addition of new long-term parking space in and around the Downtown Core. Based on a survey of guest trips for the Hilton Hotel, 25-30% of the guest arrive by personal car or by rental car and require parking. For 100% occupancy of the 3 hotels, guest parking demand can be expected to exceed on-site supply by approximately 67%. This deficit would be further increased by employee parking demand.

The parking deficits for normal conditions are indicated in Table 19, p. 114.

TABLE 19: CUMULATIVE ON-SITE HOTEL PARKING DEMAND

Hotel	On-Site Supply	Demand*	Net
Hotel Ramada	130**	250	-120
Hilton (Tower No. 2 only)	110***	100+	+ 10
Holiday Inn	81****	250	-169
TOTAL	321	600	-279

* At full room occupancy.

** Assuming valet parking would be used if the garage were full; 150 existing spaces would be eliminated by the Hotel Ramada.

*** At full room occupancy during local conventions, guest and public parking spaces in the existing Hilton Hotel's garage are fully occupied; this occurs from three to five weeks per year. Otherwise, there are about 110 vacant spaces in the existing Hilton public and guest parking areas. No new parking is proposed.

****80 existing spaces would be eliminated by the Holiday Inn.

\+ Parking for the Hilton Tower No. 2 includes parking for 60 guests and 40 employees.

From Table 19, p. 114, there would be an estimated deficit of 279 spaces in guest parking at the hotels during periods of peak seasonal demand. From the off-street parking survey (see Appendix A, Table A-3, p. 201), there would remain approximately 600 spaces available on an average weekday to absorb this demand, after construction of the 2 new hotels has removed 230 existing spaces. Users of the existing 230 spaces would need to find other parking. The cumulative effect of this deficit in guest parking, employee demand, and existing users demand would be approximately 560 daytime spaces of the 600 available off-street parking spaces. Although total demand could be met by available parking, users may need to travel further than desired to locate an available space.

On-street parking adjacent to the 3 hotel would probably be replaced with passenger loading and taxi zones, thereby further reducing available parking in the area.

CUMULATIVE CONVENTION - GENERATED TRANSPORTATION IMPACTS

Transportation impacts of a joint convention by the 3 hotels, with a large attendance by local people, would result in an increase in pedestrian, vehicle, and transit trips (see discussion of impact methodology in Appendix A, p. 193). Such activities presently occur at other hotels between 6-10 times per year for a total of up to 30 days based on information from the San Francisco Convention and Vistors Bureau. Future joint convention activities may increase by 2 to 4 meetings per year. Outbound p.m. peak hour trips were estimated for the 3 hotels' meeting and banquet facilities using trip generation and assignment information contained in the Yerba Buena Convention Center Final Environmental Impact Report (EE 77.220).

Convention-generated trips were added to guests and employee-generated trips. Guests trips based on the Hilton Hotel survey were reduced by 37% to account for those convention delegates who are also guests at one of the hotels. Cumulative trips generated by guests, employees, and delegates are shown in Table 20, p. 116. Of the convention-generated trips, 63% would be attributable to local people attending the convention. Some of these people would be anticipated to already be commuting to the City by auto or public transit. These trips would be reflected in the 1982 base year estimates provided by the various transit agencies. Actual impact of local people attending a convention would be less than the totals shown in Table 20, p. 116.

Using the YBC data, pedestrian trips would increase by 57% over cumulative projections based on the Hilton Hotel survey. To the extent that some of these are not new trips, but trips made by those who presently commute to the City, the estimates in Table 20, p. 116, are high.

STREET PATTERN CHANGES UNDER CONSIDERATION

Muni's Five-Year Plan proposes to change N. Fifth St., presently one-way northbound between O'Farrell and Eddy Sts., to two-way between O'Farrell and

TABLE 20: CONVENTION-GENERATED CUMULATIVE TRAVEL CHARACTERISTICS - P.M. PEAK HOUR OUTBOUND ONLY

Mode	Person Trip Ends Generated By: Meeting Facilities*	Guests, Employees, & Other Facilities**	Total Person Trip Ends+	% Increase++
Walk	4,000	4,250	6,680	57
Auto	1,200	440	1,480***	236***
Muni	930	370	1,070***	189***
BART	190	190	310***	63***
Others	280	300	470***	57***

* Based on modal split developed by traffic engineering studies for George Moscone Convention Center.

** Based on modal split developed from the Hilton Hotel survey in February 1980.

***Some of the 63% local visitors would already commute to San Francisco on one or more of the above modes; these trips would be in the 1982 base year estimates. To the extent that these are not new trips, the estimates in this table are high.

\+ Guests trips have been reduced by 37% to account for those convention delegates who are also guests at one of the hotels.

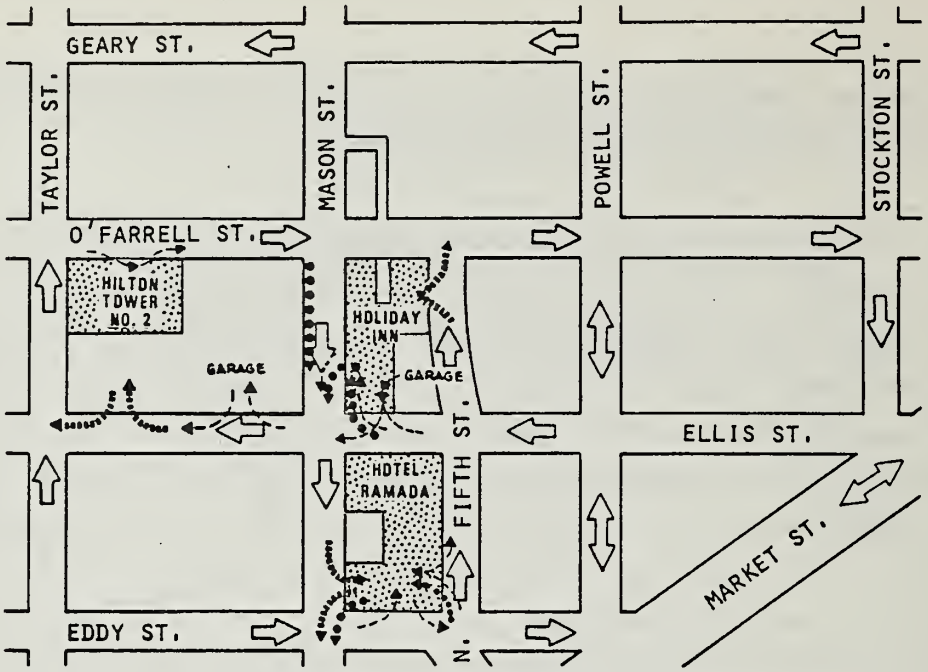
++ % increase in travel for total convention, guest and employee trips over guests and employee trips based on Hilton Hotel survey.

Ellis Sts. This change would allow for two-way access to the truck loading dock area of the Holiday Inn located off N. Fifth St. Southbound thru-traffic from O'Farrell St. to Market St. would not be diverted from Mason and Stockton Sts. to N. Fifth St. based on information provided in Muni's Five Year Plan and the City's Transportation Planning Department./6/ Most of the traffic turning right from O'Farrell St., into N. Fifth St. would be hotel oriented. The peak hour volumes are estimated at less than 100 per hour. If one of the exiting 2 northbound right turn lanes from N. Fifth St., to O'Farrell St., is eliminated by the conversion, the Service Level would drop from Level A (assuming no back-up from Powell St.) to Level C. If the 2 lanes are maintained by removing a parking lane, the Service Level would remain at Level A.

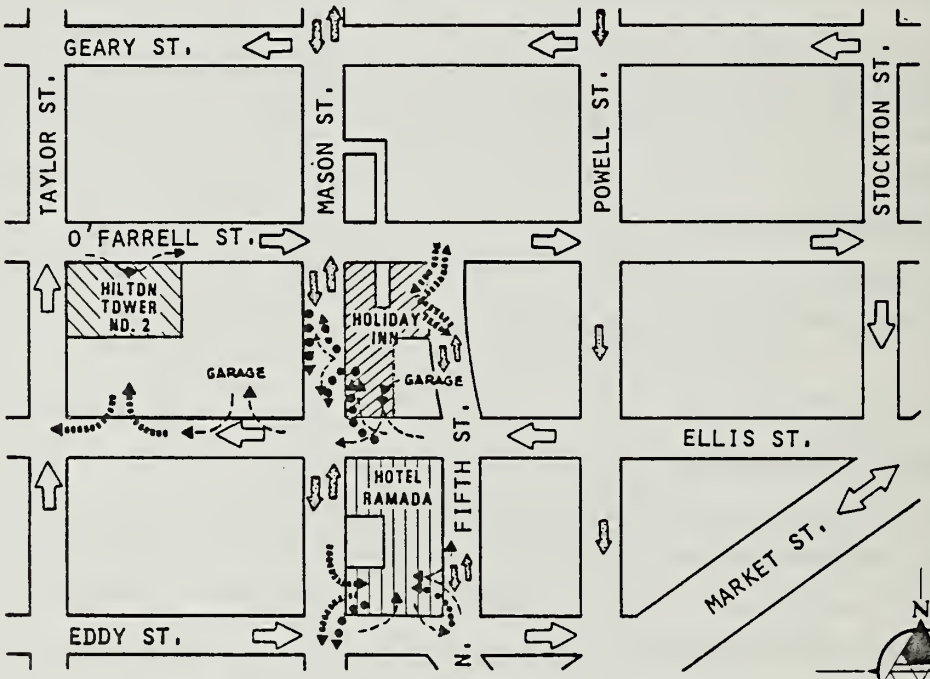
There could be temporary blockages of the diamond lane on O'Farrell St. by right turning vehicles waiting for pedestrians.

The intersection of O'Farrell and Powell Sts. was observed during the 4:00 to 6:00 p.m. period on Tuesday, 12 August 1980. The peak hour for O'Farrell St. traffic was 5:00 to 6:00 p.m.; 260 vehicles were observed in left-turn movements from O'Farrell St. into the northbound lane of Powell St. These turns, as well as the other turning movements at the intersection, conflicted with heavy pedestrian crossing flows so that vehicles were often left in the intersection at the conclusion of the green cycle. Momentary interference with Powell St. thru traffic often ensued. The designation of Powell St. as one-way southbound between Geary and Ellis St. would remove these left turns from the intersection and thereby improve operating conditions at the intersection and at the intersection of Powell and Geary Sts., one block to the north. The cable car would continue 2-way operations along Powell St. according to the City's Transportation Planning Department./6/ The displaced left turns could then be made at Grant Ave., two blocks east of Powell St. This proposed change to one-way southbound flow for Powell St. (see Figure 28, p. 118) would result in southbound traffic for Mason, Powell and Stockton Sts. and northbound movement on N. Fifth St. and Taylor Sts. in the immediate vicinity of the project (with 2-way movement on the previously noted 1 block of N. 5th St.).

If Mason St. were to be made two-way between Geary and Market Sts. as proposed by the City's Transportation Planning Department (see Figure 28, p. 118), a portion of the displaced left turns from O'Farrell St. to Powell St. could be diverted onto Mason St. northbound. The designation of Mason St. as two-way would also attract some of the trips now northbound on Taylor St. This change would have two effects on traffic movements through the intersection of Mason and O'Farrell Sts. Capacity would be reduced by the loss of one lane in the southbound approach, unless a third lane were added to Mason St. to maintain 2 southbound lanes. The southbound left turns from Mason St. to O'Farrell St. would now have to be made against a northbound through movement and the left turns would conflict with pedestrian crossing



EXISTING CONDITIONS
WITH HOTELS



FUTURE PROPOSED CONDITIONS
WITH HOTELS

LEGEND

- PROPOSED HOTEL DEVELOPMENT
- TRUCK ACCESS
- BUS ACCESS
- AUTO AND/OR TAXI ACCESS
- EXISTING DIRECTION OF TRAFFIC FLOW
- PROPOSED DIRECTION OF TRAFFIC FLOW

FIGURE 28
CUMULATIVE HOTEL ACCESS
IN THE
PROJECT VICINTY

traffic on the north side of O'Farrell St. and consume additional signal green time. The combined effect would be to increase the ratio of volumes to capacity at the intersection by more than 12%. The impact would be further increased if the curb lane in the northbound side of O'Farrell St. were not effectively kept clear of stopped vehicles for the left-turning movements from O'Farrell St. to Mason St. The peak-hour Level of Service would be reduced to Level C.

Mason St. as a two-way street would allow buses and perhaps taxis to be loaded or unloaded at the proposed Holiday Inn from the passenger side of northbound vehicles at the curb. Otherwise, the proposed porte cochere at the southwest corner of the site would have to accommodate buses, taxis, and autos. If Mason St. remains 1-way, interference with outbound Ellis St. traffic might occur as a result of delays in loading and unloading with the attendant backup of buses.

Entry to the garage of the proposed Holiday Inn would be from Ellis St. at a driveway east of the porte cochere - a direction opposite to the one-way westbound designation of Ellis St. The two-way designation of Mason and N. Fifth St. would allow the vehicles leaving the porte cochere to be driven clockwise around the block to the garage. A 2-way Mason St. would also provide a new more direct access route to the truck docks of the proposed Hotel Ramada from Market St.

Two existing Muni lines in the immediate area of the project are proposed to be changed. A full discussion of these changes is included in the San Francisco Municipal Railway Five-Year Plan 1979-1984. The 25-line designation would be retired, and its coverage northerly of Market St. would be included in line 27. This line would operate on N. Fifth St., Ellis and Taylor Sts. outbound and on Jones St., Ellis St. and N. Fifth St. inbound. The 31-line now runs inbound on Eddy St. and Fifth St. to Market St. and outbound on Turk St. from Market St. The outbound move would be changed to N. Fifth St. from Market St. to Eddy St. These changes are contingent on either making Ellis and Eddy Sts. two-way streets, or on installing contra-

flow transit lanes. In the latter case, the street would remain one-way for private vehicles, but the exclusive transit lane would run in the opposite direction. Removal of the 25-line from Mason St. would reduce transit impacts due to traffic congestion exiting the Holiday Inn porte cochere off Mason St. or from the queuing of taxis or tour buses on Mason for the Hilton and Holiday Inn. Conflicts at the Holiday Inn service docks would still occur, but the occurrence of such conflicts would be minimal due to expected teamster schedule of activities. Peak delivery service between 7-8 a.m. would include 10 service vehicle trips. Waiting vehicles would have to queue along the N. Fifth St. curb until space became available.

NOTES - Transportation, Circulation, and Parking

/1/Cahill Construction Co., Mr. William Cahill, Project Manager, personal communication, 23 July 1979.

/2/Holiday Inn, Inc., U.S. Hotel Division, Richard L. Bishop, Hotel Architect - Projects Development, personal communication, 1 July 1980.

/3/Airporter, J. Leonoudakis, Owner, telephone communication, 21 February 1980.

/4/Holiday Inn-Financial District, Mr. Harold Berlo, Innkeeper, personal communication, 16 July 1979.

/5/Chi-Hsin Shao, Transportation Policy Group, memorandum, 15 February 1980, re: Center City Circulation Program.

/6/Department of City Planning, Transportation Planning Section, Glenn Erikson, Transit Preferential Streets Coordinator, personal communication, 25 July 1980.

F. METEOROLOGY AND AIR QUALITY

AIR QUALITY

Two types of air quality impacts would result from the proposed project: short-term construction impacts and long-term, vehicle-related impacts. Excavation and construction activities would affect local air quality for approximately 1 to 2 years. Studies/1/ of construction projects have shown that construction activities would generate approximately 1.2 tons of particulates (dust) per acre per month of activity. This would include emissions from excavation and earthmoving, traffic on unpaved surfaces, wind erosion, and construction of the buildings.

Assuming a total of 2 months for excavation activity on the 0.89 acre construction site, approximately 2.1 tons of particulates would be generated. Without mitigation this could result in 24-hour average concentrations of approximately 5500 micrograms per cubic meter (ug/m^3) at and adjacent to the site. This would be approximately 55 times higher than the State 24-hour standard of 100 ug/m^3. Except to people with respiratory problems, construction particulates, which tend to be relatively large, are more an annoyance than a health hazard, and settle out of the atmosphere rapidly with increasing distance from the source. This is in contrast to gaseous pollutants and small-size particulates from combustion.

The possible use of oil-based paints for interior coating would generate hydrocarbon emissions, typically 500-700 grams per liter of paint used. Regulation 8, Rule 3 of the Bay Area Air Quality Management District/2/ (BAAQMD) prohibits the sale and application of any architectural coating containing more than 250 grams of volatile organic material per liter after 2 September 1980. The possible use of asphalt for roofing would also generate hydrocarbon and odor emissions, subject to Regulations 2 and 3 of the BAAQMD. Diesel-powered construction equipment would emit nitrogen oxides, carbon monoxide (CO), sulfur oxides, hydrocarbons, and particulates./3/ The amounts

of these pollutants generated during construction would increase local concentrations but would probably not increase the frequency of violations of air quality standards./4/

At full occupancy the project would generate approximately 1,930 vehicular trips per day. The largest percentage traffic increase due to the project would be on Mason St., where roadside carbon monoxide (CO) concentrations would be increased through the addition of approximately 810 vehicles per day. Ellis St., between Mason St. and N. Fifth St., had the highest traffic volumes in 1980, and is expected to have the highest in 1982, and therefore would have the highest roadside CO levels in the area. Carbon Monoxide concentration impacts for Ellis and Mason Sts. are shown in Table 21.

TABLE 21: PROJECTED WORST-CASE CUMULATIVE ROADSIDE CARBON MONOXIDE CONCENTRATION IMPACTS - PARTS PER MILLION (PPM)

Streets	1980	1982 Base Case	1982 Plus Other Hotels	1982 Plus Other Hotels and Holiday Inn	
				ppm	% of standard
Ellis (between Mason and N. Fifth Sts.)					
Peak 1-hour (Standard = 35 ppm)	20.0	17.6	17.9	18.1	52
Peak 8-hour (Standard = 9 ppm)	9.9	8.7*	8.8*	8.9*	99
Mason (between O'Farrell and Ellis Sts.)					
Peak 1-hour (Standard = 35 ppm)	16.9	14.9	15.4	16.0	46
Peak 8-hour (Standard = 9 ppm)	9.0*	7.9	8.0	8.1	90

NOTE: Underlined values are those which presently exceed the applicable standard. The probable error of the calculations is such that any of the asterisked values could represent concentrations exceeding the standards.

SOURCE: Dames & Moore

The project would also generate pollutants from the combustion of natural gas for space heating and hot water. Table 22, p. 123, compares project-generated traffic and building-operation emissions to total emissions in the nine-county Bay Area.

CUMULATIVE AIR QUALITY IMPACT

If the proposed Holiday Inn, Hilton Tower No. 2, and Hotel Ramada were all built simultaneously, higher particulate concentrations from construction activities would be spread over a greater area than if the Holiday Inn alone were constructed.

The cumulative effect of the 3 proposed hotels, after completion, on CO levels in the Tenderloin area was estimated./5/ The results of the analysis are shown on Table 21, p. 122. Cumulative development could cause the eight-hour standard to be exceeded on Ellis St. Peak one-hour CO concentrations

TABLE 22: PROJECTED 1985 DAILY PROJECT-GENERATED EMISSIONS (tons/day)

	Fuel Combustion Emissions*	Vehicular Emissions**	Total Project Emissions	1985 Estimated Regional Emissions***
Carbon Monoxide	0.0001	0.836	0.836	1391
Hydrocarbons	0.0000	0.072	0.072	771
Nitrogen Oxides	0.0005	0.086	0.086	662

* This category includes emissions from space heating and hot water and other building operations. U.S. EPA, 1977, Compilation of Air Pollutant Emission Factors, Third Edition, p. 1.4-1 thru 1.4-3, Research Triangle Park, N.C.

** BAAQMD, 1979, EMFAC-5, Vehicular Emission Factors. Calculations were based on the following assumptions: 100% occupancy of 805 guest rooms; 2.9 daily trips per occupied room, averaging 11.3 miles per trip; 4 min. idle per trip; and average speed of 30 m.p.h. when not idling.

*** Warren Crouse, Senior Environmental Specialist, Bay Area Air Quality Management District, telephone communication, 9 April 1980. These projections are based on draft revisions by the Air Resource Board to account for new control strategies, rates and estimation methodologies subsequent to the Association of Bay Area Governments (ABAG) January 1979, Bay Area Air Quality Plan.

Source: Dames & Moore

on both Mason and Ellis would be below the standard during worst case conditions. The CO concentrations in 1982 on Mason and Ellis Sts. averaged over eight hours would be approximately 0.4 ppm and 0.2 ppm higher, respectively, than if no hotel projects were built.

In summary, cumulative hotel development in the Tenderloin would add to local and regional accumulations of CO, hydrocarbons and nitrogen oxides, and particulates. During adverse meteorological conditions, such as inversions, accumulations could be great enough to constitute a health hazard. The recently adopted regional Air Quality Plan/5/ found that ozone was a regional problem and would continue as such in the future, unless substantial reductions in hydrocarbon emissions were made. CO and particulates are problems on a local scale. Because the development would increase emissions of hydrocarbons, CO, and particulates, attainment of the standards would be impeded, although the development would not conflict directly with the control strategies of the Air Quality Plan.

BAAQMD Regulation 11 sets a ground level lead emission limit of 0.001 mg/m^3 (24 hour average). There is evidence that lead accumulates in lung tissue when ambient concentrations exceed 0.003 mg/m^3. Downtown San Francisco and San Jose have the highest lead levels in the Bay Area. The San Francisco monthly average exceeded the federal 0.0015 mg/m^3 standard for 21 out of 60 months (see Table D-1 in Appendix D, p. 220) in the period 1974-1978./7/ Values as high as 0.0026 mg/m^3 have been reported in New York./8/ Lead in the air of downtown San Francisco primarily comes from gasoline. Increased traffic due to the project would increase exhaust emmissions by approximately the same percent as the increase in vehicle trips. The net lead content of the air would be expected to decrease due to the increasing percentage of vehicles using lead-free gas.

INDOOR AIR POLLUTION

As buildings become more air-tight and rates of ventilation air exchange decrease, both in the interest of energy conservation, there is increasing

exposure of building occupants to gases given off by building materials, to recirculated particulates from cigarette smoking, and to the carbon dioxide exhaled by building occupants.

Four pollutants are known to occur. Radon, a radioactive gas naturally given off in varying amounts by different building materials, increases in buildings with low ventilation rates. This increase becomes great enough to be of concern when ventilation rates go below 0.3-1.0 air change per hour./9, 10/ Some buildings already have air exchange rates below 0.1 air change per hour. Increased radon exposure results in increased risk of lung cancer. Information adequate to serve as a quantitative base for risk assessment is not yet available. This matter is being investigated by the U.S. Department of Energy (DOE). Current belief is that "routine" measures to increase energy efficiency in existing buildings are not increasing radon exposure enough to have a detectable effect. There is a professional difference of opinion about new buildings.

Numerous organic materials are given off by wall board, flooring materials, particle board and plastic furnishings. Attention has focused so far on formaldehyde, a small, carcinogenic, organic substance used in the manufacture of resins, particle board and insulation. Part of the formaldehyde remains unreacted when these materials are made and formaldehyde may be released as some of these materials decompose. Formaldehyde from either source diffuses into room air at a rate dependent on room temperature and humidity.

Materials which give off a relatively high level of formaldehyde in poorly ventilated areas may cause immediate symptoms due to irritation of the respiratory tract as well as contributing to an unknown extent to the lifetime risk of cancer. Formaldehyde is recognized as a respiratory irritant at 0.01 ppm/11/. It is not known whether current reports of symptoms at lower concentrations are due to toxic effects below 0.01 ppm or to the effects of combined exposure to formaldehyde and other organic compounds. The European indoor standard for formaldehyde is about 0.1 ppm. New buildings with ventilation

rates below 0.3 air.changes per hour may exceed this standard./12/ The U.S. has no indoor air quality standards.

Conference rooms where people smoke may have particulate levels as high as 2000 ug/m^3 (outdoor standard calls for the 24-hour average not to exceed 260 ug/m^3 more than once a year). Carbon monoxide standards are routinely exceeded in offices./10/ These conditions could well represent the most polluted air that white collar workers are likely to be exposed to.

NOTES - Meteorology and Air Quality

/1/U.S. Environmental Protection Agency (U.S. EPA), 1975, Compilation of Air Pollutant Emission Factors, Supplement #5, p. 11.2.4-1.

/2/Bay Area Air Quality Management District, Regulation 8, Rule 3 for Architectural Coatings, adopted 1 March 1978.

/3/U.S. EPA, 1975, Compilation of Air Pollutant Emission Factors, Supplement #4, pp. 3.2.7-2,-3.

/4/Association of Bay Area Governments (ABAG), Dr. R. Wada, Program Manager-Air Quality, personal communication, 16 July 1979.

/5/CO calculations were made for the worst-case, poor-dispersion meteorological conditions according to the BAAQMD Guidelines for Air Quality Impact Analysis of Projects, 1975, updated for 1979 emission factor revisions. Background concentrations were assumed, on the basis of the average of the second-highest concentrations recorded over the past three years at the Ellis St. sampling station, and emissions projections assuming "minimum reasonable further progress" in ABAG, August 1979, 1979 Update of the San Francisco Bay Area Environmental Management Plan, Figure 2-5, p. 42, to be 14.4 ppm (1-hour) and 8.3 ppm (8-hour) in 1980, and 12.7 ppm (1-hour) and 7.3 ppm (8-hour) in 1982.

/6/Association of Bay Area Governments, BAAQMD and Metropolitan Transportation Commission, January 1979, 1979 Bay Area Air Quality Plan, San Francisco Bay Area Environmental Management Plan.

/7/Information Bulletin 4-4-79, Atmospheric Lead in the San Francisco Bay Area, 1970-1978, BAAQMD, 1979, p. 5.

/8/Lioy, P.J. et al., "Long-Term Trends in Total Suspended Particulates, Vanadium, Manganese and Lead at Near Street Level and Elevated Sites in New York City," Air Pollution Control Association Journal 30:153-156 (1980).

/9/Hollowell, Craig D., et al., "Radon-222 in Energy Efficient Buildings," American Nuclear Soc. Mtg., 11-16 November 1979.

/10/Budiansky, Stephen, "Indoor Air Pollution," Environmental Science & Technology 14:1023-27, 1980.

/11/California State Energy Resources Conservation and Development Commission, DEIR Residential Insulation Program, 22 February 1978, p. 60.

/12/Lin, Chin-I, et al., "Indoor/Outdoor Measurements of Formaldehyde and Total Aldehydes," 178th National Meeting, American Chemical Society, 9-14 September 1979.

G. NOISE

COMPATIBILITY OF THE PROPOSED PROJECT WITH EXISTING SOUND LEVELS

Sound level measurements at 4 locations shown in Figure 20, p. 54, were analyzed to determine the day-night ambient sound level, L_{dn}, at the site. A summary of measured sound levels is contained in Table 23.

TABLE 23: SUMMARY OF AMBIENT SOUND LEVELS AT BASELINE MEASUREMENT LOCATIONS ON FRIDAY 6, JULY 1979

Location		Sound Levels - dBA/a/						
No.	Time	L_{eq}	L_1	L_5	L_{10}	L_{33}	L_{50}	L_{99}
1	1:45 - 1:55 p.m.	60	66	64	63	60	59	55
2	2:05 - 2:15 p.m.	59	66	63	62	59	58	52
3	2:25 - 2:35 p.m.	59	65	62	60	58	57	55
4	2:45 - 2:55 p.m.	70	83	74	70	66	64	58

/a/Sound waves traveling outward from a source, exert a force known as the sound level, measured in decibels (dB's), a logarithmic scale. Decibels corrected for the variation in frequency response of the typical human ear are designated as A-weighted sound levels or dBA's. The statistical sound levels L_x, shown above, represent the sound level exceeded 'x' % of the time. The equivalent sound level, L_{eq}, is the 'energy average' sound level.

Source: Dames & Moore

Measured sound levels were compared to measurement data at similar urban sites contained within Dames & Moore's files and with the report "Community Noise"/1/ to predict the fluctuation in daily sound levels and to compute the estimated day-night sound level at each location. The day-night sound level is an averaged sound level measurement based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises by adding 10 dBA to sound levels between the hours of 10 p.m. and 7 a.m. in computing the L_{dn}. Estimated day-night sound levels range from 62 dBA at Locations 2 and 3 along N. Fifth and O'Farrell Sts., to 63 dBA at Location 1 along Mason Street and 70 dBA at Location 4 along Ellis St. at the property line (see Section III.G, p. 53, for a description of the sound measurement locations).

The Environmental Protection Element of the San Francisco Comprehensive Plan/2/ contains predicted 1974 and 1995 day-night sound levels along thoroughfares in San Francisco. The day-night sound levels for each thoroughfare adjacent to the project site are:

Street Segment	Predicted Day-Night Sound Level (L_{dn}) in dBA @ 50 ft. from Center of Street	
	1974	1995
Mason Street	65	60
O'Farrell Street	70	65
Ellis Street	60	60
N. 5th Street	60	60

Comparison of measured sound levels with those of the Noise Element/2/ shows average mid-afternoon traffic sound levels 0 to 10 dBA below the projected 1974 day-night sound level (L_{dn}) when measured sound levels are extrapolated to adjust for varying setbacks of measurement positions from the streets. Predicted sound levels provided by the City's Noise Element are therefore conservative.

The City and County of San Francisco has adopted guidelines/2/ for determining the compatibility of various land uses with community sound environments. For transient lodging, which applies to this project, the compatible sound levels and land use consequences are described below.

DAY-NIGHT SOUND LEVEL (L_{dn}) in dBA	LAND USE CONSEQUENCES
Less than 60 dBA	Satisfactory, with no special sound insulation requirements.
60 to 80 dBA	New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed sound insulation features included in the design.
75 dBA or greater	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in design.

State regulations/3/ require hotels located within Community Noise Equivalent Level (CNEL) contours of 60 dBA to have an acoustical analysis showing that the interior sound levels do not exceed CNEL 45 dBA. For the proposed project, those rooms fronting on Mason and O'Farrell Streets would require a review of design to incorporate noise reduction measures because the exterior CNEL is presently predicted in the City's Noise Element/2/ at 65 dBA and 70 dBA, respectively. The CNEL represents a 24-hour equivalent sound level incorporating a weighting of 5 and 10 dBA for events occurring in the evening (7:00 p.m. to 10:00 p.m.) and night-time (10:00 p.m. to 7:00 a.m.), respectively. In most communities the CNEL is equivalent to the day-night sound level, L_{dn}.

The details of exterior construction have not been completed; however, due to wind loading factors, glazing for the tower structure would be 1/4 inch minimum thickness. In addition to its sound insulation value, the 1/4 inch glazing would have greater thermal insulation value than thinner windows.

The California Administrative Code, Title 24, limits exterior glass areas to 40% of the total exterior wall area. The average exterior wall sound

attenuation is anticipated to be greater than 25 dBA, resulting in an interior sound level below CNEL=45 dBA for traffic on O'Farrell Street. Interior sound levels of plumbing and air-conditioning noise sources are not expected to contribute to an increase in the interior sound level but would be noticeable when in use. The estimated interior sound level with windows closed and air conditioning on is CNEL=40 dBA.

NOISE IMPACTS DUE TO PROJECT CONSTRUCTION

A detailed construction schedule is not available; therefore, construction of the project is considered to be similar to the construction of an average commercial project. It is expected that the noisiest period of construction would occur during the excavation phase./4/ The construction equipment required for this phase of construction and the sound level data are presented in Table 24, p. 132. The equivalent sound level, L_{eq}, during the excavation phase is estimated to be 84 dBA at 50 feet from the center of construction activity. It should be noted that the prediction and description of the construction noise environment is difficult, due to: (1) simultaneous operations such as demolition and excavation for limited periods, (2) variations in construction equipment noise level due to operator's maintenance procedures and changes in specifications and manufacturers of equipment, and (3) variations in the proximity of equipment to noise sensitive receptors. Values and numbers of equipment presented in Table 24, p. 132, should serve as a basis for analyzing the "worst case" condition. Operational sound levels during the foundation, erection and finishing phases should be below those during the excavation phase since pile driving would not be required on this project.

During construction, all powered equipment, other than impact tools, would have to meet the San Francisco Noise Ordinance/5/ requirement of 80 dBA at 100 feet. Meeting this limit would insure that these pieces of equipment would generate sound levels for sidewalk pedestrians approximately equal to the present maximum sound level of 83 dBA during truck passbys.

Sound levels in Maria Manor Hotel would reach as high as 72 dBA with windows open (allowing 12 dBA outside - to - inside noise reduction for typical hotel construction/2/) resulting in possible sleep interference during the daytime construction period. Maximum sound levels at the Heine Piano Company Building would be of equal magnitude, resulting in the need for employees to communicate in raised voices during worst case conditions. Since no windows exist on the east or west elevations of the Heine Piano Company Building, noise impacts within the structure would be less than if there were windows on either facade. The presence of windows only on the south facade would reduce the possibility of sustained or long-term noise impacts. Annoyance during noisiest construction activities could occur. Vibrations from operations of large construction equipment should be dampened by the sandy soil conditions; however, annoyance resulting from the rattling of nearby windows could occur at surrounding buildings.

Trucking of construction materials to and from the site would not generally cause a noticeable increase in the day-night sound levels on local arterials leading to the site. The resultant day-night sound level increase would be less than 1 dBA. Outside of an acoustics laboratory, a 3 dBA increase in sound level is physiologically a just-noticeable difference. An increase of at least 5 dBA is required for a change in community response.

Construction noise would be heard in the Heine Piano Co. building. Construction operations have not adversely affected piano quality or sales at Sherman Clay Piano Co. on Kearny St., across from the Crocker Bank Building presently under construction./6/ Although Sherman Clay is farther from construction than the Heine building, it is assumed that only slightly higher sound levels (about 5 dBA) would occur at the project since traffic noise along Kearny St., is greater than at the rear of the Heine building. Even with windows closed, sound quality would be less than ideal in the area of the windows.

During construction activities, the raising of voices would be required to communicate at sidewalk level at distances of greater than approximately 4

TABLE 24: TYPICAL CONSTRUCTION EQUIPMENT, USE FACTORS AND SOUND LEVELS FOR THE EXCAVATION PHASE OF A COMMERCIAL CONSTRUCTION PROJECT

EQUIPMENT/a/	SOUND LEVEL @ 50 FT. IN dBA	NUMBER OF UNITS	USE /b/ FACTOR
Air Compressor	67	1	1.000
Caterpillar Tractor, 29-199 hp	72	1	0.172
Caterpillar Tractor, 200-450 hp	78	1	0.016
Excavator, 176-299 hp	82	1	0.008
Generators	78	2	1.000
Backhoe/Loaders	77	1	0.073
Pavement Breaker 26-70 hp	85	1	0.020
Portable Pneumatic	85	1	0.023
Pumps	76	2	1.000
Truck, Off/Highway	78	1	0.016
Truck, Rear Dump	78	1	0.007
Wheeled Loader, 250-500 hp	78	1	0.099
Wheeled Tractor	72	1	0.219

Equivalent sound level, L_{eq}, for excavation activities @ 50 ft. = 84 dBA

NOTES:

/a/Items listed are types of equipment which could be used on this project.

/b/Use factors represent the time equipment is operating at its noisiest mode. For example, during excavation activities the use of an air compressor would occur continuously at a steady-state sound level of 67 dBA, whereas, caterpillar tractor sound levels would vary throughout the construction period and would result in a peak sound level contribution of 72 dBA during 17.2% of the daily construction period.

Source: U.S. Environmental Protection Agency, 1977. "Characterization of Construction Site Activity," Phase 1 Interim Report, Office of Noise Abatement and Control, Washington, D.C.

feet. The construction of plywood safety barriers in this area should aid in reducing sound levels by up to 5 dBA; however, the need for access and visibility in certain areas would reduce the effectiveness of these barriers as sound attenuators in the vicinity of such openings. As is the case in most construction projects, complaints due to equipment noise can be expected.

NOISE IMPACTS DUE TO PROJECT OPERATION

Following the completion of construction, the project could affect the local sound environment in 2 ways: (1) traffic noise could increase due to increased traffic, and (2) mechanical equipment could cause an increase in noise.

The amount of traffic generated by the proposed project during any hour of the day would cause the equivalent sound level to increase by less than 1 dBA along any of the adjacent streets or major local arterials leading to the site. A one decibel increase is undetectable by the human ear.

Mechanical and electrical equipment to be used on the site have not yet been chosen. San Francisco's Noise Ordinance,/7/ No. 274-72, Article 29, Regulation of Noises, Section 2909 requires that noise emitted from fixed noise sources (such as mechanical equipment) shall not exceed 60 dBA between the hours of 10:00 p.m. and 7:00 a.m., or 70 dBA between the hours of 7:00 a.m. and 10:00 p.m. at the receiver's property line. Mechanical equipment associated with the project would be muffled so as to meet these limits. Fans and air-conditioning equipment would be located on the rooftop and the Level 4 mechanical area and would not produce sounds distinguishable over traffic noise for pedestrians. Even attenuated to 60 dBA at the property line, mechanical equipment would be audible to Maria Manor and Heine building occupants, when windows are open. Sound levels would be below existing traffic generated sound levels.

NOTES - Noise

/1/U.S. Environmental Protection Agency, 1971. "Community Noise," PB-207 124, Washington, D.C.

/2/San Francisco Department of City Planning, August 1974, "Transportation Noise: Environmental Protection Element of the Comprehensive Plan of San Francisco," p. 19.

/3/California Administrative Code, Title 25, Chapter 1, Subchapter 1, Article 4: Noise Insulation Standards, February 22, 1974.

/4/U.S. Environmental Protection Agency, 1977. "Characterization of Construction Site Activity," Phase I Interim Report. Office of Noise Abatement and Control, Washington, D.C.

/5/San Francisco Noise Ordinance No. 274-72, December 4, 1972, Section 2907: Construction Equipment, p. 7.

/6/Sherman Clay Piano Co., Chuck Lund, Piano Saleman, telephone conversation, 23 October 1980. Mr. Lund stated that "although construction noise could be heard, particularly during the opening of the front door, no complaints from customers, piano tuners, or salesmen have been made."

/7/San Francisco Noise Ordinance No. 274-72, December 4, 1972, Section 2909: Fixed Source Noise Levels, p. 9.

H. CULTURAL & HISTORIC IMPACTS

The proposed building excavation would extend down to a maximum of 20 feet below the surface. The site is not located in an area of known historic or archaeologic interest. The nature of existing fill on the site is unknown. There is a possibility of finding materials from the Young Men's Christian Association building demolished by the April 1906 earthquake and fire.

I. VEGETATION AND WILDLIFE

Construction of the hotel would include the introduction of green space within the site. With the exception of deciduous trees along the perimeter sidewalk, all plants would be contained in pots, tubs or planters in the porte cochere. Plans include the planting of trees on the outside sidewalk area surrounding the hotel. Seasonal leaf loss would occur for these deciduous trees.

No impact on rare and endangered plants or wildlife is anticipated because of the 100% built, urban nature of the site.

J. ENERGY

During the 21-month construction period, direct consumption of energy on the project site would be approximately 0.66 million kilowatt-hours (KWH) of electricity and 80,000 gallons of vehicle fuel (this includes fuel used to run the engine generator). In addition, about 250 billion btu of energy would be used in fabricating and transporting materials used in construction./1/ The British Thermal Unit (btu) is a standard unit for measuring heat (see definition p. 137).

Two alternative HVAC (heating, ventilating and air-conditioning) systems have been selected. These are:

(1) a system which would use individual heat pumps in each guest room and a central air-conditioning system for the common areas; the heat pump system uses water as a heat source and uses air to transmit heat to and from the conditioned space.

(2) a 4-pipe system which would use fan coil units in the guest rooms, supplied with hot and/or chilled water by a central boiler and chiller.

Final selection would be based on bids received from the sub-contractors, energy consumption, initial equipment costs, operating costs, and interest rates. The energy consumption of both systems would meet the California Energy Commission Standards./2/ More electricty would be used by the heat pump system than the 4-pipe fan-coil system due to the use of electrical energy to provide heating. The 4-pipe fan-coil system reduces the electrical consumption but increases the natural gas load to provide the required heating. The heat pump would be adaptable to a supplementary solar heating system and a computerized energy management system; however, neither of these energy conservation systems would be included at this time as part of the project.

Preliminary projections/3/ of the average daily and monthly operational energy consumption of the project are shown in Table 25, p. 137. Peak electrical demand loads for the base system from 6-8 p.m. would be approximately 3400 KW. Figures 29 through 32, pp. 138 thru 141, give electrical and gas consumption curves for the heat pump and 4 pipe fan-coil systems based on preliminary estimates by the mechanical and electrical engineers, Yoshpe Engineers.

TABLE 25
SUMMARY OF ANTICIPATED GAS & ELECTRICAL CONSUMPTION FOR BUILDING LIGHTING, POWER AND HEATING VENTILATING & AIR-CONDITIONING (HVAC) SYSTEMS

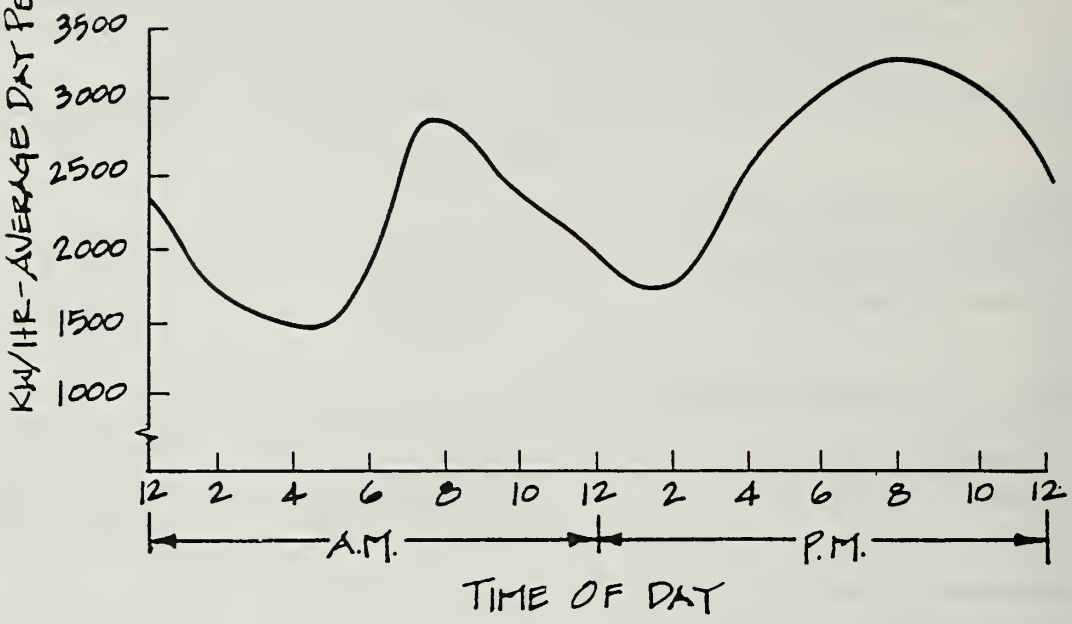
	Heat Pump System	4-Pipe Fan-Coil System
Connected Kilowatt Load:		
Lights	950 KW	950 KW
Power (Common Area)	565 KW	565 KW
Guest Room HVAC	750 KW	530 KW
	2265 KW	2045 KW
Estimated Average KWH/Month:		
Lights	283,000 KWH/Mo.	283,000 KWH/Mo.
Power	149,000 KWH/Mo.	149,000 KWH/Mo.
Guest Room HVAC	176,000 KWH/Mo.	46,000 KWH/Mo.
	608,000 KWH/Mo.	478,000 KWH/Mo.
Estimated Average Consumption of Natural Gas:	3143 BTU/Mo/Sq.Ft.	5628 BTU/Mo/Sq.Ft.
Estimated Peak Average Daily Fossil Fuel Consumption:		
4:00 P.M. to 6:00 P.M.	3215 Cu. Ft./Hr.	4953 Cu. Ft./Hr.
Estimated Annual Consumption		
Natural Gas	1.79×10^{10} Btu	3.2×10^{10} Btu
Electricity	8.7 million KWH	6.9 million KWH

KW = Kilowatt; KWH = Kilowatt-Hour; Cu. Ft.= Cubic Feet;

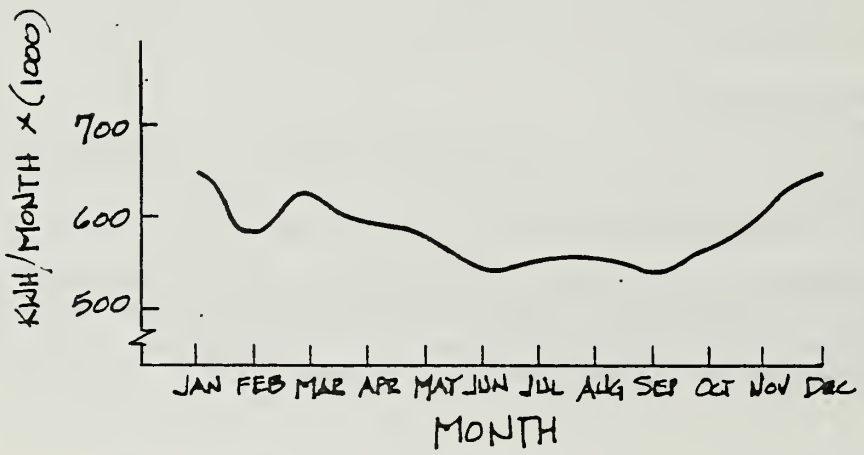
The "British Thermal Unit" (BTU) is a standard unit for measuring heat, about equal to that from burning one standard wooden kitchen match. Technically, it is the quantity of heat required to raise the temperature of 1-pound of water by 1°F (252 calories) at sea level.

Source: Yoshpe Engineers, 6 September 1979, letter to William Schuppel & Associates, Architects, re: Energy Calculation Summary for Holiday Inn Hotel at Mason Street, San Francisco, CA.; updated 8 September 1980 to reflect changes in design.

NOTE:
THE HEAT PUMP SYSTEM WOULD CONSIST OF INDIVIDUAL HEAT PUMPS IN EACH GUEST ROOM AND A CENTRAL AIR-CONDITIONING SYSTEM FOR THE COMMON AREAS.



ANTICIPATED DAILY ELECTRICAL CONSUMPTION

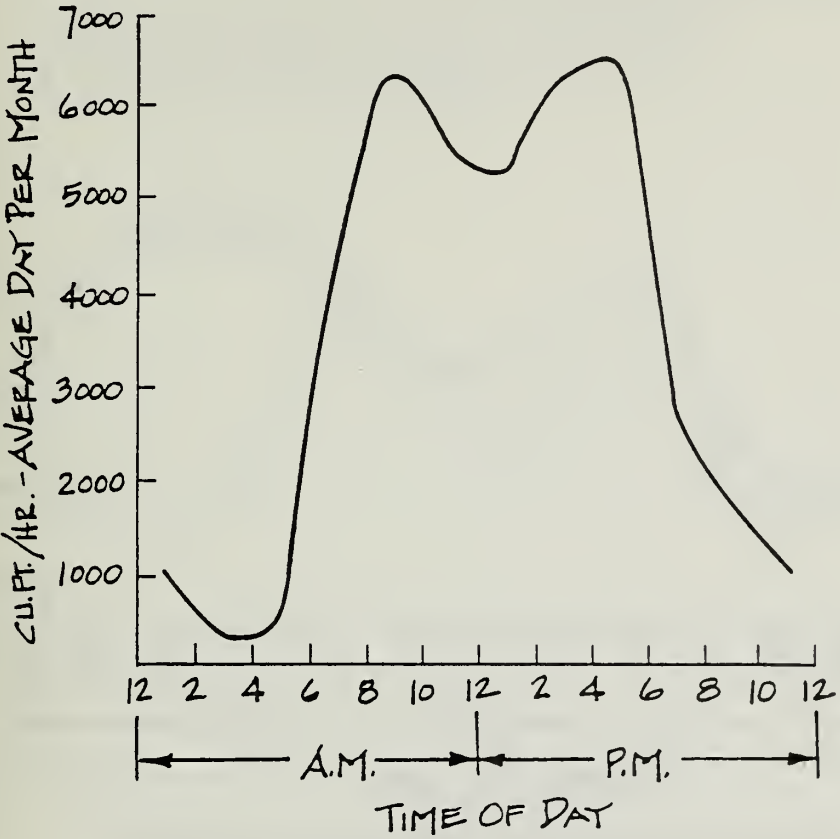


ANTICIPATED ANNUAL ELECTRICAL CONSUMPTION

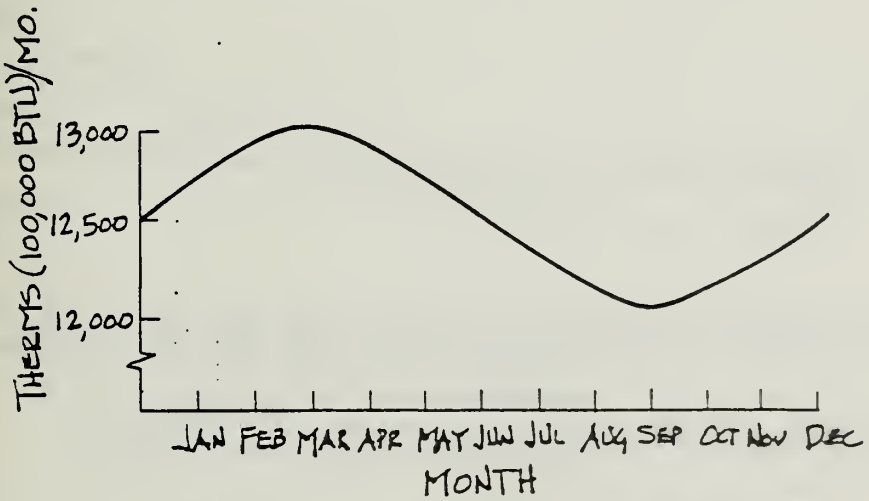
FIGURE 29
HEAT PUMP SYSTEM ELECTRICAL CONSUMPTION

SOURCE: YOSHPE ENGINEERS

NOTE:
THE HEAT PUMP SYSTEM WOULD CONSIST OF INDIVIDUAL HEAT PUMPS IN EACH GUEST ROOM AND A CENTRAL AIR-CONDITIONING SYSTEM FOR THE COMMON AREAS.



ANTICIPATED DAILY GAS CONSUMPTION

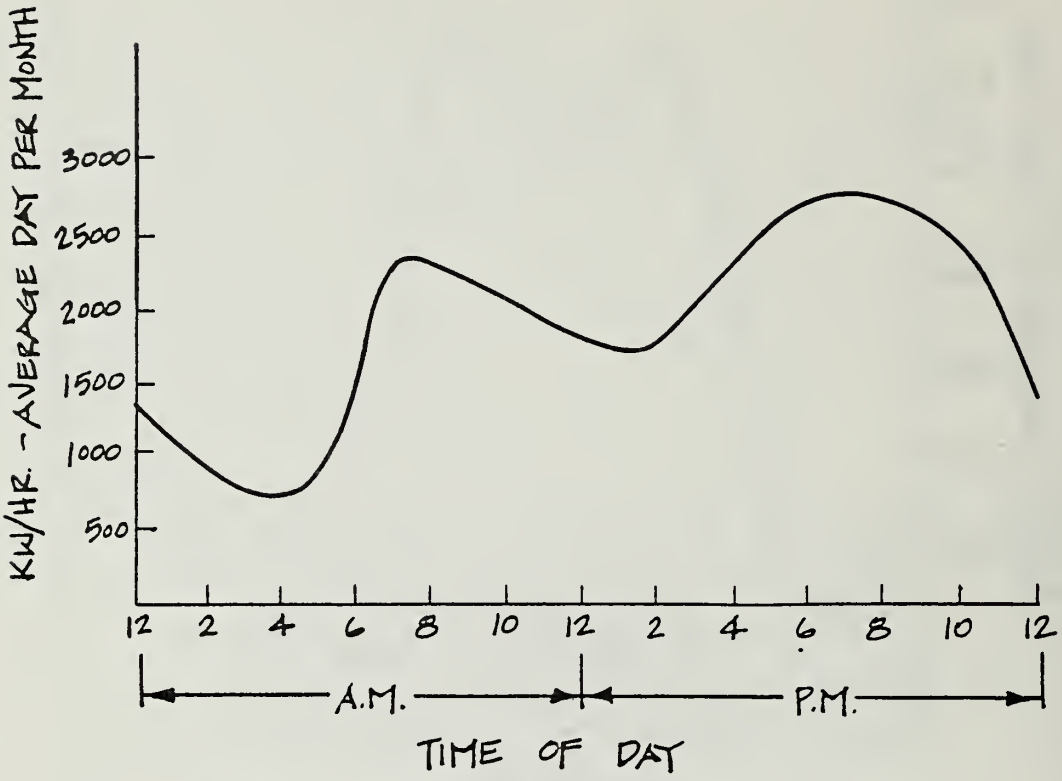


ANTICIPATED ANNUAL GAS CONSUMPTION

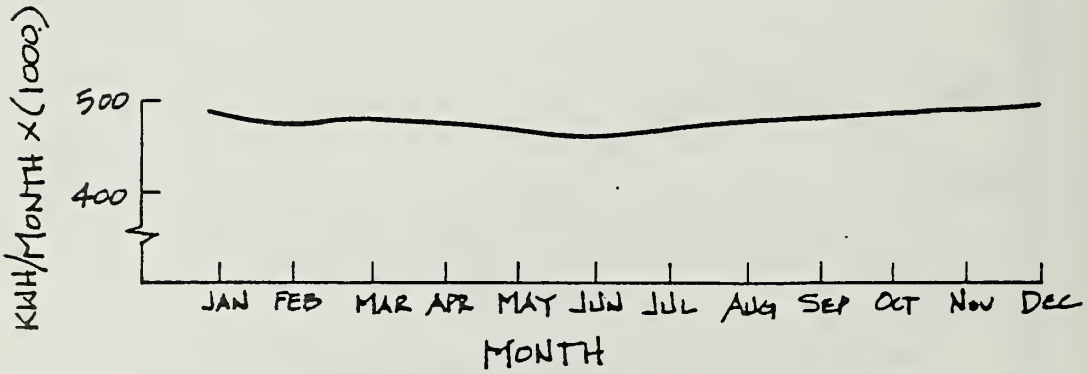
FIGURE 30
HEAT PUMP SYSTEM GAS CONSUMPTION

SOURCE: YOSHPE ENGINEERS

NOTE:
THE 4-PIPE FAN-COIL SYSTEM WOULD CONSIST OF A 4-PIPE SYSTEM WITH FAN COIL UNITS IN THE GUEST ROOMS, SUPPLIED WITH HOT AND/OR CHILLED WATER BY A CENTRAL BOILER AND CHILLER.



ANTICIPATED DAILY ELECTRICAL CONSUMPTION



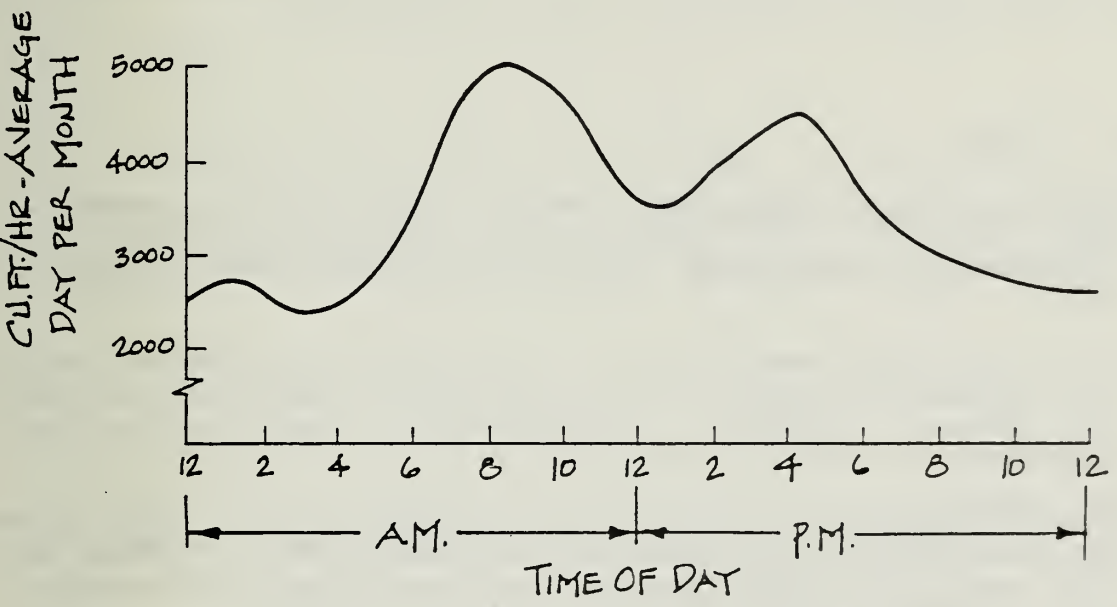
ANTICIPATED ANNUAL ELECTRICAL CONSUMPTION

FIGURE 31

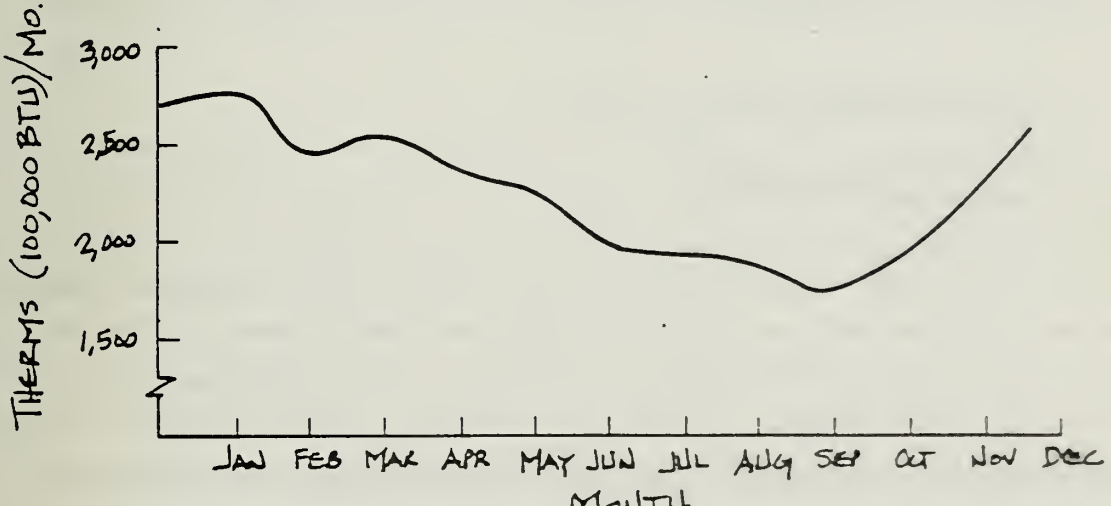
4-PIPE FAN-COIL SYSTEM ELECTRICAL CONSUMPTION

SOURCE: YOSHPE ENGINEERS

NOTE:
THE 4-PIPE FAN-COIL SYSTEM WOULD CONSIST OF A 4-PIPE SYSTEM WITH FAN COIL UNITS IN THE GUEST ROOMS, SUPPLIED WITH HOT AND/OR CHILLED WATER BY A CENTRAL BOILER AND CHILLER.



ANTICIPATED DAILY GAS CONSUMPTION



ANTICIPATED ANNUAL GAS CONSUMPTION

FIGURE 32

4-PIPE FAN-COIL SYSTEM GAS CONSUMPTION

SOURCE: YOSHPE ENGINEERS

Peak electrical and natural gas demands would occur in the late afternoon and early evening hours.

Implementation of the project would increase energy consumption because of increased vehicular travel. Indirect fuel consumption by vehicles is not predictable due to the wide variation in origins of guests arriving at the hotel and uncertainties about fuel price and availability.

NOTES - Energy

/1/Based on energy intensiveness data for typical building materials from Kegal, Robert A., "The energy intensity of building materials," Heating Piping and Air Conditioning, June 1975 and William Tapler, Architects, New York.

/2/California Energy Commission, 1975, California Administrative Code, Title 24: Building Standards, Part 6 - Special Building Regulations, Division T20, Chapter 2, Article 4: "Regulations for Energy Conservation" with amendments.

/3/Yoshpe Engineers, 1917 22nd Street, Sacramento, Ca. 95816, letter to William Schuppel & Associates on 6 September 1979, re: Energy Calculation Summary for Holiday Inn Hotel at Mason Street, San Francisco, Ca.; updated 8 September 1980 to reflect changes in design.

K. COMMUNITY SERVICES AND UTILITIES

POLICE AND FIRE SERVICES

Construction of the proposed hotel and facilities could increase the number of crimes such as burglary, theft and other related activities. Hotels have historically been focuses of theft and prostitution due to the transient nature of their guests. The number of parking spaces provided in the underground parking levels could also add to the incidence of auto related crimes, even with parking attendants and security staff. Officer P. Libert of the San Francisco Police Department indicated that there would be no need to hire additional police staff should the project be approved./1/ A project-related increase in evening pedestrian activity would decrease crimes related to "lonely" sidewalks.

A full-time security staff would be employed during operation of the project. The envisioned policy is to close all access to the hotel except the main entrances after 9 p.m. It is expected that there would be a closed-circuit TV system, both in staff and guest areas. The intended security system would be self-sufficient, relying on the City police only for arrests and emergency situations.

FIRE

Existing water distribution systems are adequate for fire-fighting purposes. Fire Marshal Chief W. Graham stated that of the proposed structure would not require additional staff or fire fighting equipment./2/

WATER

Water use for the proposed project is estimated at maximum to be 121,000 gallons a day or slightly over 100 gallons a day per person, assuming a peak occupancy of the 1200 guests and allowing for kitchen and service employees use. The San Francisco Water Department indicated that the increase in water demand could be met without any need for enlargement or relocation of existing mains./3/

Cumulative water demand by all 3 proposed hotel developments in the area, including Holiday Inn, Hotel Ramada, and the Hilton Tower No. 2, would average about 410,000 gpd or 0.5% of the current average daily water use in San Francisco.

WASTEWATER

Wastewater flows generated by the proposed hotel are anticipated to be approximately 115,000 gallons a day assuming a 5% loss in water consumption for landscape irrigation and evaporative loss. At present, there is adequate sewer capacity to accommodate the projected flows and it would not be necessary to increase the capacity of any existing mains. Further, the

San Francisco Bureau of Sanitary Engineering has not encountered any problems with storm flow during wet weather in the vicinity and does not foresee any problem with the addition of the proposed hotel./4/ The project would increase the present load on the North Point Water Pollution Control Plant which is not in compliance with the Clean Water Act requirements during wet weather. The project would contribute to the overflow of waste to the Bay under storm conditions.

Cumulative wastewater generation from the 3 proposed hotel developments would average about 390,000 gpd, or 0.8% of the current average daily dry-weather flows to the North Point Plant. This would represent 0.5% of the capacity of the Southeast Treatment Plant after expansion and installation of secondary treatment facilities has been completed in September 1982. Flows to the North Point Plant will be directed to the Southeast Plant after the expansion.

SOLID WASTE

The proposed project would generate 4,100 lbs. or about 2 tons of solid waste per day, given the guidelines developed by the State Solid Waste Management Board./5/ This would represent 0.25% of the Golden Gate Disposal Company's current total daily San Francisco volume of 800 tons./6/ The Golden Gate Disposal Company anticipates no difficulty in providing service to accomodate the increased demand./6/

Cumulative solid waste generation from the 3 hotel developments proposed in the Tenderloin would be approximately 4.5 tons per day or 0.5% of the Golden Gate Disposal Company's present daily collection.

PG&E

Pacific Gas and Electric Co. (PG&E) estimates that their existing facilities would be able to handle an increase of 2,000 kilowatts and 3,000,000 BTU/hr peak gas usage as anticipated for the proposed hotel. No new supply facilities are foreseen as being required due to the proposed project./7/

NOTES - Community Services & Utilities

/1/San Francisco Police Department, Planning and Research Division, Officer P. Libert, personal communication, 16 July 1979.

/2/San Francisco Fire Department, Fire Marshal, Chief W. Graham, personal communication, 17 July 1979.

/3/San Francisco Water Department, Jack Kenck, Manager of the City Distribution Division, telephone communication, 31 March 1980.

/4/Bureau of Sanitary Engineering, Wastewater Control Division, M. Francies, telephone communication, 19 July 1979.

/5/State of California Solid Waste Management Board, 1974, "Solid Waste Generation Factors in California," based on 1 lb/100 sq. ft. of floor space/day.

/6/Golden Gate Disposal Company, F. Garbarino, Office Manager, telephone communication, 19 July 1979.

/7/Pacific Gas and Electric Company, L. Cordner, San Francisco Division, telephone communication, 17 July 1979.

L. GEOLOGY, SEISMOLOGY & HYDROLOGY

GEOLOGY/HYDROLOGY

The site would be excavated to an average depth of 20 feet for the underground parking structure. This excavation would remove approximately 10,000 cubic yards of near surface fill and sandy deposits. This material would be transported to an undetermined disposal site within San Mateo County. No subsidence hazard is anticipated since all fill would be removed during the excavations. This fill would probably consist of brick, sand, and debris from the old YMCA building.

The removal of spoils from the site could cause the spillage of silt and sand in the streets along the haul routes. Such street dirt would be a safety hazard for operators of vehicles, particularly motorcyclists and bicyclists. The street dirt would be a source of siltation in the storm drains and a source of dust.

A possible hazard of sloughing and caving of the soils could occur during excavation of the site. Such movement could occur because of the exposure of a free face in the excavation wall. This movement could affect adjacent streets, buildings and underground utilities. Sloughing and caving could occur at any time; however, this hazard would be greatly increased should an earthquake occur. Temporary supports or construction of a properly sloped temporary excavation would be required to minimize the potential for sloughing and caving. These measures are presently under evaluation by the firm of Converse Ward Davis Dixon, Geotechnical Consultants, and would be incorporated within the design and construction; no impacts from sloughing and caving of soils would therefore be expected.

The water table is expected to be below the proposed excavation level for the underground parking structure. Therefore, seepage or dewatering impacts would not be expected at the site.

SEISMICITY

The extent of potential damage from an earthquake is difficult to predict and is dependent upon the magnitude and epicenter of the quake as well as on design features of the structures. Ground shaking during an earthquake might damage the proposed building, but probably would not cause its collapse. The building and mechanical systems would be designed to meet the standards of the San Francisco Building Code, the Uniform Building Code and the California Administrative Code, Title 24, Building Standards./2/ These standards require that buildings and building systems withstand horizontal and vertical static and dynamic loads designed to the maximum credible earthquake for the area (an 8.3 Richter magnitude event on the San Andreas Fault).

Because the building is expected to flex during an earthquake and would be constructed of steel beams and columns whose size would be based on design loads according to the American Institute of Steel Construction,/3/ the upper tower structure would sway in the event of a major earthquake. The top of

the tower would not be anticipated to sway over the 3 ft. limit recommended by the Structural Engineers Association of California (SEAOC) for a building of this height.

The swaying motion of the tower during an earthquake might cause glass to crack if this is not anticipated in construction details; or in severe cases the precast concrete exterior panels might crack.

NOTES - Geology, Seismicity & Hydrology

/1/Converse Ward Davis Dixon, Geotechnial Consultants, 29 July 1980. "Soil and Foundation Investigation, Holiday Inn - Mason and O'Farrell, San Francisco, California," prepared for GHT Associates, Project No. 80-4115-01.

/2/California Administrative Code, Title 24, Building Standards, Part 2, Basic Building Regulations, Chapter B23, General Design Requirements, Sacramento, California, 1976.

/3/American Institute of Steel Construction, 1970. Manual of Steel Construction, New York, N.Y.

M. GROWTH INDUCEMENT

The project would represent a 4% increase in the number of available rooms for hotels in the City./1/

Approximately 360 employees would be required by the hotel, restaurant, and parking garage. Of these new downtown employees, less than 5% are expected to be newcomers to San Francisco, either as residents or commuters.

The project would attract new visitors to the City, resulting in a variety of indirect growth effects. These effects would include additional demand for housing, demands for a variety of commercial and municipal services, and a demand on present transit systems, taxi services and streets.

The project would contribute towards revitalization of the Union Square Shopping Area as well as provide new hotel development to meet the demand for rooms generated by existing office building developments and the George Moscone Convention Center. The project could stimulate new or upgraded retail development within the immediate area to provide services for hotel guests.

The project would require no new construction or extension of public service or utility systems and would occur in an already developed downtown urban setting. It would therefore not require any infrastructural improvements that would open or intensify development opportunities that do not already exist. The project would create an increased demand for existing services.

The project sponsors do not feel that an oversupply of guest rooms would arise, considering the project's location within the Downtown area and because room demand attributable to the George R. Moscone Center alone is estimated at 2,700 to 3,500 rooms./2/ Occupancy in the first year following construction would be 69% based on estimates by Holiday Inn./3/ Average room rates are estimated at $82/day in 1982 and $96/day in 1985 when occupancy would be estimated to increase to 84%./3/

NOTES - Growth Inducement

/1/Based on 18,574 total advertised major and non-major hotel rooms with membership in the San Francisco Convention and Visitors Bureau as of 21 March 1978.

/2/The estimated 2,700 rooms attributable to the George R. Moscone Center was obtained from: Laventhol and Horwath, 1 March 1979, Projected Hotel Tax Collections for San Francisco; the 3,500 figure was obtained from R. Sullivan, General Manager, San Francisco Convention and Visitors Bureau, telephone communication, 4 April 1980 (see Dept. of City Planning, September 1980, "Draft EIR - Hotel Ramada" EE 80.171, p. 149).

/3/Holiday Inn of America, undated, "Market Analysis for Holiday Inn - San Francisco - Downtown,." updated 24 June 1980.

V. MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROJECT

In the processes of project planning, design, and coordination, a number of measures have been identified that would reduce or eliminate the potential adverse environmental effects of the proposed project. Most of these measures have been or would be adopted by the project sponsors or their architects, builders, or other sub-contractors; some measures are still under consideration, and some have already been rejected.

Each mitigation measure and its status are discussed in Table 26, pp. 150 through 160. Where a measure has been rejected, the reasons for its rejection are discussed. Where an action is still under consideration or is suggested, the actions required for implementation are also shown. In most cases, these actions would be optional on the part of Cahill Construction, Holiday Inn, the architect, or future sub-contractors, unless required by the City as conditions of project approval.

Table 26, pp. 150 through 160, includes mitigation measures suggested by the North of Market Planning Coalition which have been agreed to by the project sponsors./1/

NOTES - Mitigation Measures

/1/North of Market Planning Coalition, 30 July 1980, list of impacts and suggested mitigation measures distributed at the 30 July 1980 citizen's meeting. A copy of this letter is on file at the Office of Environmental Review, 45 Hyde Street, for review.

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
URBAN DESIGN AND VISUAL IMPACTS		
- The proposed design of the project would integrate glass and precast concrete exterior panels to minimize contrasts with buildings that surround the site. The design of the exterior signs and graphics would conform to the standards of the San Francisco Planning Department and San Francisco Planning Commission.	- Additional surface variation, texture and detail could be provided at upper levels to increase visual interest of the project, break up large, uniform surfaces, and complement the scale and texture of nearby older buildings. Such design would conform more closely to the standards of the San Francisco Planning Department and the San Francisco Planning Commission.	
- The project sponsor would develop a landscaping and maintenance plan for all project frontages. Deciduous trees similar to those adjacent to the site (on the north side of O'Farrell Street) would be planted.		
- The 4-story base building would provide a visual transition from the existing buildings to the proposed tower. The U-shape of the tower would break up the north face of the building.		
- The domed-glass, upper level observation deck would provide a distinctive visual termination of the building. Curved glass features would also be used elsewhere in the design.		
- The tower would be setback from the adjoining Maria Manor Hotel to insure retention of air circulation through this building.		
- An entry plaza and a retail shop off the porte cochere would provide pedestrian interest. A flower kiosk is also proposed in this area.		
- The project sponsors would be willing to participate in a street landscaping program coordinated with the sponsors of the Hotel Ramada and Hilton Hotel Tower as desired by the City.		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT - (Contd.)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
URBAN DESIGN AND VISUAL IMPACTS (continued)		
- Surface texture, and detail would be included in the project design at street and tower levels to enhance the visual interest of the project, break up large, uniform surfaces, and complement the scale and texture of nearby buildings.		
- Construction barriers would be painted and decorated, subject to review by the Planning Department, to provide visual interest.		
VEHICULAR AND PEDESTRIAN TRAFFIC AND CIRCULATION		
- To avoid conflicts with peak morning and evening traffic during the excavation and construction phases of the project, haul trucks would enter and exit the site between 9 AM and 4 PM. The Cahill Construction Company would meet with the San Francisco Bureau of Engineering, Traffic Engineering Division, and the San Francisco Office of Environmental Review to determine other feasible construction traffic mitigation measures that should be implemented.	- The project sponsors would consider promoting the securing of emergency white curb in front of the Maria Manor Hotel. Implementation of such a measure would fall under the jurisdiction of the Bureau of Traffic Engineering. Enforcement would fall under the jurisdiction of the Police Department. Project sponsors would try to reduce misuse of such emergency loading spaces by guests, employees or delivery services.	- Construction of additional parking at basement levels to the tower structure would not be provided. Such an inclusion would require additional underpinning of the Heine Piano Company Building and 20 ft. centers for structural columns rather than the project's 25 ft. centers. This reduced column spacing would result in parking problems for a self-park garage. An on-site parking deficit would occur at 100% occupancy but other off-site parking is available to handle this deficit.
- Ground level building facades at O'Farrell Street entries would be setback to provide unrestricted pedestrian flow. The ground floor facade for Mason Street would be setback to provide for greater visibility of entering and departing vehicles at the porte cochere and to provide for unrestricted pedestrian flow.	- Within a year from completion of the project, the Holiday Inn would consider conducting a survey in accordance with methodology approved by the San Francisco Department of City Planning and Office of Environmental Review, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for car-and-van-poolers. The results of this survey would be made available to the San Francisco Department of City Planning.	- Project sponsors have decided to reserve parking for hotel guests to reduce the impacts of employees parking on site.
- The proposed Ellis Street porte cochere entrance would be limited to entries to reduce anticipated conflicts with the Muni Line 25 along Ellis Street.		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT - (Contd.)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
VEHICULAR AND PEDESTRIAN TRAFFIC AND CIRCULATION (continued)		
- The project sponsors would encourage transit use by employees through the sale on-site of BART and Muni passes to employees, and by encouraging an employee carpool and vanpool system in cooperation with RIDES for Bay Area Commuters.		
- The project sponsors recognize the need for the expanded transportation services to meet the peak demand generated by cumulative development in downtown San Francisco and would participate in a fair and appropriate mechanism, such as a Downtown Assessment District, to provide funds for maintaining and augmenting transit, in an amount proportionate to the demand created by the project, should such a funding mechanism be developed by the City.		
- Secure bicyle parking facilities would be provided for project employees.		
- The project sponsors would be willing to participate on a proportional basis with other hotels proposed in the vicinity to provide a shuttle bus system between the hotels and Moscone Center to relieve demands on public transit and parking, should such a shuttle bus system be desired by the City. Should such a system be implemented and run by the hotels, the project sponsors would be willing to provide shuttle services to senior citizens on a limited and scheduled basis to community functions. A decision on this system is not proposed prior to the opening of the Moscone Center. This decision would be based on demonstrated demand and City attitude.		
- The project sponsors, in consultation with the Department of City Planning, would implement a system for employee working hours to reduce peaks of congestion on the City's transportation system.		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT - (Contd.)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
CLIMATE AND AIR QUALITY		
- Housekeeping services would maintain the site and prevent the accumulation of debris and dust in the hotel's pedestrian and vehicular entryways.	- The general contractor would consider the covering of haul trucks carrying excavated material or the watering down of haul trucks to reduce dust and potential spills on the streets although the Department of Public Works does not presently require this. Final decision on this measure would be made by the City's Bureau of Building Inspections and the Dept. of Public Works.	
- To reduce the amount of airborne particulates during excavation, the site would be regularly sprinkled with water. Scheduling would be dependent upon weather conditions and the scheduling of construction activities.		
- During the construction phase of the project, construction equipment would be maintained and operated to minimize exhaust emissions, as stipulated in subcontractors' contract provisions. Additionally, where feasible, water-based paints would be used as an alternative to oil-based paints to reduce hydrocarbon emissions resulting from the proposed project; this would reduce hydrocarbon emission by about 60%.		
- Observation deck areas would be glass enclosed to provide screening against winds and inclement weather.		
- The potential for odors would be mitigated by daily kitchen garbage pickup and venting of garbage storage areas. Vents for these facilities would be at the rooftop.		
- Street trees would be provided to reduce wind impacts to pedestrians along the site's perimeter.		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT (Cont'd)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
- The project sponsors would develop a program to alleviate the impacts of airborne particulates during construction on nearby residents who are generally confined to their homes because of age, disability or ill health. Measures would include one or more of the following: distribution of surgical masks to residents, frequent watering of the site, and screening of windows at the Maria Manor Hotel to filter dust. A physician's advice would be obtained.		
- Maintenance and refueling of construction equipment could result in spills of gasoline or other materials. The general contractor would confine construction equipment maintenance and refueling activities to areas of the site where petroleum spills could be contained.		
NOISE		
- Heating, ventilation and air-conditioning (HVAC) equipment would be designed to deliver no more than 65 dBA to the nearest receptor to avoid increasing ambient sound levels.		
- To minimize construction noise, only muffled gasoline and diesel-powered construction equipment would be used. This equipment would be muffled to 80 dBA at 100 feet in accordance with the San Francisco Noise Ordinance.		
- The project sponsors would develop a program to alleviate the noise impacts during construction on nearby residents. Measures would include one or more of the following: distribution of ear plugs to residents, startup of certain noisy construction activities after 8 a.m., and advising nearby residents in advance of noisy operations to allow for scheduling of activities to minimize sleep interference. Decisions on scheduling of certain noisy activities would be made by Mr. Robert C. Levy, Superintendent of the City's Bureau		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT (Cont'd)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITICATION MEASURES UNDER CONSIDERATION	MITICATION MEASURES NOT UNDER CONSIDERATION
NOISE (continued)		
of Building Inspection, in conjunction with the Police Department and the general contractor. Decisions would be made prior to the start-up of excavation with criteria established at that time limiting the start-up times of certain operations so as to minimize disturbance to neighborhood residents.		
ENERGY		
- All energy conservation systems would comply with standards set by the California Energy Commission. All exterior walls would be insulated to reduce heat loss and absorption through the structure.	- The project sponsors would consider the addition of a load-management system to minimize peak-hour electric power demands at a later date.	- The project sponsors would not consider the use of windpower generation from rooftop equipment because of the noise of such equipment and the difficulty of controlling it.
- Wherever possible, the lighting system would have individualized switches, time lock operation and use of flourescent lights to conserve electric energy.	- The project sponsors would consider the addition of a solar domestic hot-water system to minimize energy demand and conserve energy at a later date.	
- Low-flow plumbing fixtures would be installed to reduce water consumption; anticipated savings are estimated at 8,000-10,000 gallons per day.	- Measures necessary to make a retrofit possible at a later date would be included in the building design (i.e., provisions for access areas and necessary piping) should the heat pump system be selected as the cost-effective system. A decision on use of heat pumps would be made upon receiving manufacturer prices and evaluation of efficiences of the two alternative heating systems.	
- Window area would amount to less than 40% of the exterior facade area to meet California Administrative Code, Title 24 requirements and to conserve energy. Tinted glass would be used to reduce solar heat gain within the building. Use of tinted glass would result in a 7-20% savings in energy to heat and air condition depending upon the type of tinting selected.	- The use of double-pane glass could result in 20-33% reduction in heating and air conditioning load for the building. A decision on this measure would be made by the architects and project sponsors prior to the final design in early 1981.	
	- The project sponsers would consider the use of ultrasonic switches to turn off lights when no people are in a room for banquet and meeting room spaces; these units are inappropriate for bedrooms as they would be activated by sleeping guests.	

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT (Cont'd)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
CULTURAL AND HISTORIC RESOURCES		
- Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsors would select an archaeologist and/or maritime historian to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.		
ECONOMIC IMPACTS		
- A federal Department of Housing and Urban Development (HUD) Urban Development Action Grant (UDAG) has been applied for by the City to use in rehabilitating 900 low-cost residential hotel units in the eastern Tenderloin. The project sponsors have assisted in providing financial information for the application. The application was turned down in October 1980 but is due for reconsideration late in 1980 or early 1981. The project sponsors would be willing to assist in providing any additional information needed for approval of this program. Approval of the UDAG application would relieve increased costs to low-income residents from increasing property values.		- The project sponsors would not assist in relocation of the Fairway Rent-a-Car business.
- Jobs for qualified Tenderloin residents would be made available during construction and at the hotel.		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT (Cont'd)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
COMMUNITY SERVICES		
- Internal security measures would include a combination of closed-circuit television cameras at selected locations with viewing screens monitored in a central security office to reduce the probability of theft and robbery and to identify potential suspects.		
- The project sponsors would meet with the San Francisco Police Department, Crime Prevention Bureau to develop additional security measures.		
- Security patrols would periodically patrol hallways, the parking garage and other hotel areas. Exterior building lighting would be provided in entry areas, partially as a crime prevention measure. Landscaping would be maintained to prevent hiding places.		
- The project design would incorporate fire protection measures required by the San Francisco Building Code and the Fire Department, including a fire alarm monitoring station which would be equipped to indicate the time and location of any fire, activate emergency power sources, and control elevators. Other equipment would include an automatic fire detection system, ventilation for smoke control, a standby power generator, a sprinkler system on each floor, and an emergency fire fighting system which would operate if water mains were broken. Employees would be trained in fire safety. A handbook of emergency procedures in the event of a fire or earthquake would be placed in each guest room and given to employees.		
SOLID WASTE		
- Facilities would be provided for separate storage of glass, newspapers and other recycleable waste. Holiday Inn would implement a recycling program.		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT (Cont'd)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
GEOLOGY, SEISMICITY AND HYDROLOGY		
- During excavation, pit walls would be shored up or sloped to reduce slumping or lateral movement of soils into the pit. Cahill Construction Company and their subcontractors would comply with the Excavation Standards of the California Occupational Safety and Health Agency of the California Department of Industrial Relations.		
- Control lines and benchmarks would be identified on adjacent buildings for monitoring horizontal and vertical movements of these structures. The project sponsors, architects and engineers, and the contractors would all be responsible if settling damages utilities or existing buildings.		
- During the construction phase of the project, local streets would be mechanically swept to prevent siltation of storm drains. Construction equipment maintenance and refueling activities would be confined to locations where petroleum spillage could be contained, and wet and dry catchment basins would be constructed on site to trap silt for later transportation to landfill sites.		
- In order to reduce seismic hazards, nonstructural elements, such as hanging light fixtures, hung ceiling and wall partitions and mechanical equipment, would be firmly anchored to prevent earthquake failures of these systems, pursuant to the San Francisco Building Code. This code has been updated since the San Fernando earthquake to provide for additional margins of safety and to incorporate code provisions based on recent technical studies.		
- Window gasketing and design would allow for swaying of the building in the event of an earthquake, thereby reducing the potential of hazards created by shattered and falling glass.		
- Adjacent building structures would be under-		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT (Cont'd)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
GEOLOGY, SEISMICITY AND HYDROLOGY (continued)		
recommendations of both the structural and geotechnical consultants to reduce settlement. Earthquake factors would be incorporated within the design to reduce the likelihood of building components falling to the sidewalk. Glass units are tested under various wind and long term loading conditions to determine the breaking stress and approximate load deviation each can withstand. A safety factor of 2.5 (per the Uniform Building Code) is applied to allow for possible defects. Glass units which meet the above requirements would reduce the possibility of glass falling to the sidewalk and streets. Compliance with American Society of Testing and Materials standards for gypsum, concrete, screws, nails, fasteners, etc., would reduce the probability of failure of such units. Project compliance with National Fire Protection Association standards, National Fire Code, San Francisco Building Code and California Administrative Code, Title 24 Building Standards, would cover fire, life, and structural safety aspects for these building elements.		
- All parking would be contained in the southern half of the site to reduce underpinning required around the existing piano store.		

TABLE 26: MITIGATION MEASURES PROPOSED TO MINIMIZE THE ADVERSE EFFECTS OF THE PROPOSED PROJECT (Cont'd)

MITIGATION MEASURES TO BE INCLUDED IN THE PROJECT	MITIGATION MEASURES UNDER CONSIDERATION	MITIGATION MEASURES NOT UNDER CONSIDERATION
INDOOR AIR POLLUTION IMPACTS		
- In order to limit the possibility of increasing human exposure to the carcinogens radon and formaldehyde in the building, the ventilation system would be designed to provide a minimum of 0.5 air changes per hour in all occupied building spaces.	- In order to provide indoor air quality that meets outdoor standards for particulates and CO_2, consideration would be given to controlling all the ventilation, or conference-room ventilation rates, by CO_2 concentration activated switches which would automatically increase ventilation rates as CO_2 generation increased due to large meetings and/or smoking. - Consideration would be given to designing the HVAC system so that non-smokers would not have to breathe the recirculated smoke of smokers. This could be accomplished, for example, by use of filters on the recycled air, or exhausting that fraction of the air indicated by sensors to be most polluted. - The feasibility of setting up a screening system for interior materials, to avoid those which give off relatively large amounts of organic gases (such as formaldehyde), would be investigated.	

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

URBAN DESIGN ASPECTS

The project would represent a departure in style and character from neighboring older buildings. Construction of the project would increase wind speeds along the south side of O'Farrell Street between Mason and N. Fifth Sts. during westerly and northwesterly wind conditions. Portions of Mason and O'Farrell Streets would be shaded during morning and midday hours throughout the year.

TRAFFIC AND TRANSPORTATION

Construction traffic would lessen the capacity of adjacent streets during the 21 to 24 month construction period. The increase in Muni ridership due to the project would approximate 0.8% during the peak hour. This increase, along with more street congestion generated by the project, would slow Muni vehicles and increase the costs of public transit services in the long term. The percent increase in project-generated traffic above the 1982 base projections would range from 2% for O'Farrell Street to 10% for Mason Street.

NOISE

Construction noise would cause daytime sleep interference in neighboring hotel rooms, particularly for units with open windows. Speech interference and annoyance may occur at the Heine Piano Company during peak construction activities.

ENERGY

During operation, the project would require about 6.9 - 8.7 million kilowatt hours of electricity per year, generated primarily from non-renewable fossil fuels, and about 0.5 - 0.9 million cu. ft. of natural gas per year.

CUMULATIVE DEVELOPMENT

The project would contribute to cumulative traffic, transit, visual and air quality impacts of development under construction and proposed within the area. The Holiday Inn together with the proposed Hotel Ramada and Hilton Tower No. 2 would increase the visual density of development in the eastern Tenderloin area and the demand for employee housing within the City.

Cumulative hotel development could increase pressure for conversion of residential hotels to transient hotels in the Tenderloin district, if the present conversion moratorium is removed in November 1980. Coupled with rising rents resulting from rising land values, cumulative hotel development could cause a displacement of residents, particularly low income and elderly, and local businesses serving this residential clientele. These groups would be displaced by tourist-serving businesses and other commercial development more suited to raised land values and rents. Approval of the City's UDAG request to renovate 900 low-income residential hotel units in the eastern Tenderloin would help minimize these effects.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

The project sponsors, GHT Associates, have considered a number of alternatives to the proposed project. To date, all alternatives studied by the project sponsors have contemplated the use of the project site. Project development on alternative sites, either in San Francisco or in other cities such as Oakland has not been considered by the sponsors because of the Holiday Inn's desire to increase their hotel room capacity within the City and because of the availability of the project site.

Alternatives discussed included the purchase and demolition of the Heine Piano Company on Lot 13, and purchase of the vacant Lot 22 for development of the project on one or both of these additional parcels. The recent death of the property owner for the Heine Piano Company has resulted in a tie-up of the estate in probate court. Negotiations for purchase of the property are continuing with GHT Associates but have not been resolved at this time. Depending upon when, if ever, the Heine building site would become available, the project sponsors would investigate the feasibility of developing the site for either rental or hotel use. If available before construction, the impacts on scheding and the need for an environmental assessment would be determined before pursuing any design revisions. Possible alternatives for Lot 13 which are under consideration by the project sponsors include:

(1) addition to the existing plans to incorporate additional rooms (this alternative may require revisions to the proposed plans to provide access to this area);

(2) addition of retail, restaurant and meeting room space (this alternative may require revisions to the proposed plans to provide access to other public room spaces on Levels 1 thru 4);

(3) addition of combination of hotel and public room spaces;

(4) creation of open space or plaza area for public use with landscaping; and

(5) Heine Piano Company building would remain under its present use.

Impacts of development of Lot 13 would result in increases in traffic, energy use, construction noise and project revenues while altering the architectural character of the building.

Vacant lot #22 was auctioned off by the City in January 1980 and purchased by other interests. The likelihood of purchase by the project sponsors is doubtful. The new owners at this time propose a development of Lot 22 as a two-story commercial/office building.

Architectural alternatives including the design of "twin-towers" and a "T-shaped" tower have been eliminated due to design problems and various fire code, FAR site and housekeeping restrictions.

The alternatives discussion describes and compares the basic features of each alternative and present reasons for its rejection by the project sponsor. The major environmental effects of each alternative are described and compared to those of the proposed project in Table 22, pp. 175 through 182.

A. HIGHRISE - ALTERNATIVE 'A'

This alternative is a 33-story (320 ft.) tower structure of which 31 floors would be developed for guest rooms and 2 floors would be developed for lobby and public room space (commercial, restaurant and banquet areas). The top-most floor would be used as a "penthouse" and contain the building's mechanical and electrical equipment. This alternative was originally proposed as the project but was rejected due to design changes requested by the City's Planning Department.

The high-rise alternative would provide the largest number of total guest rooms of the three "build" alternatives or 936 rooms. Twelve rooms would be located on the public room floor (located directly above the ground or lobby floor), 494 rooms would be located on the 1st to 13th floors of the lower tower and the remaining 430 rooms on the 14th to 31st floors of the upper tower. The tower and base building would contain 427,000 gross square feet of

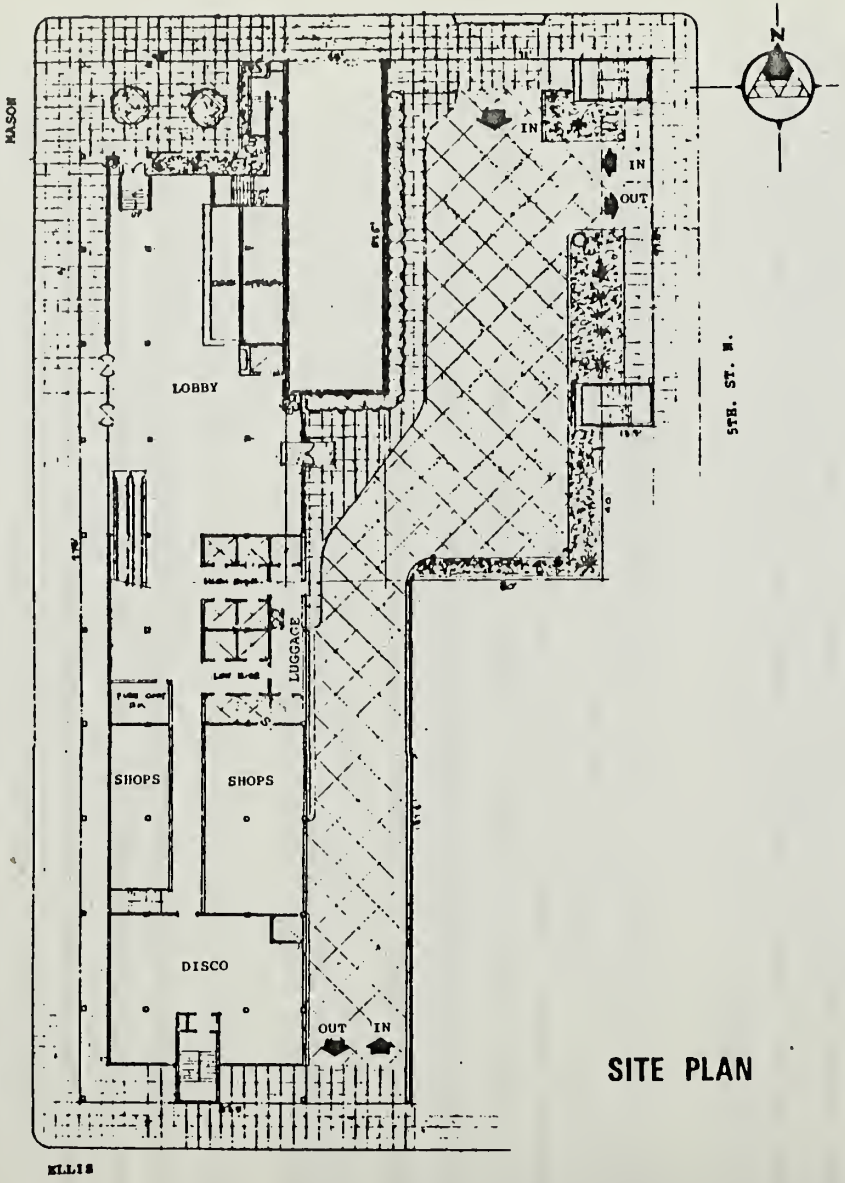
floor area above grade: 203,000 gross square feet between floors 1-13, 180,000 gross square feet between floors 13-31, and 44,000 square feet between the lobby and public room floors. The upper portion of the tower (floors 14 through 31) would be set back from the O'Farrell Street facade by approximately 112 feet. Three floors of underground parking would be developed for 161 guest parking spaces. The building would be set back from Ellis and O'Farrell Sts. at Level 1, thereby improving visibility of vehicles entering and leaving the motor court and parking levels (see site plan, Figure 33, p. 166).

The main vehicular entry to the hotel lobby would be from the corner of O'Farrell Street, facing N. 5th Street. Other pedestrian entries and exits would include entries off Mason, O'Farrell and Ellis Streets for pedestrian flow throughout the site (see Figure 33, p. 166). Driveway entrances would be on O'Farrell, Ellis and N. 5th Streets for passenger drop-off at the main lobby and access to the underground parking garage. Loading dock, receiving and trash pickup facilities would be located on the first basement level with access from the sidewalk on Ellis Street and within the parking garage (see Figure 33, p. 166).

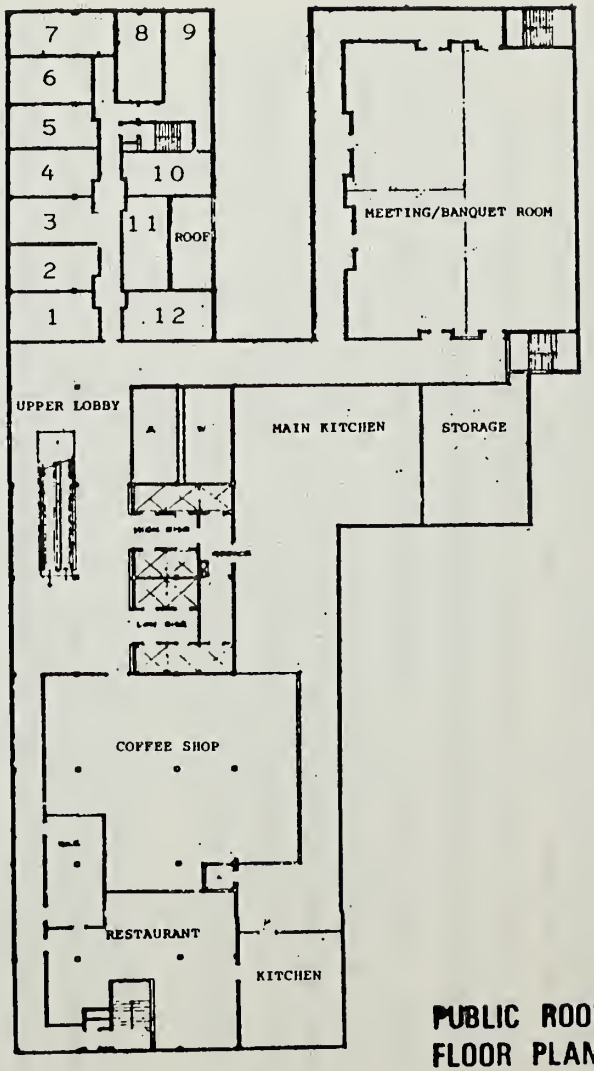
Additional description of this alternative is available at the San Francisco Office of Environmental Review in the second administrative draft of the proposed Mason-O'Farrell Hotel Project. Typical floor plans are shown in Figure 33, pp. 166 through 168. Project elevations are shown in Figure 34, p. 169. This alternative has been rejected by the project sponsors because of architectural changes requested by the City's Planning Department.

B. COMBINATION HOTEL/APARTMENT - ALTERNATIVE 'B'

This alternative would place a 150 ft. tower on the site which would comply with the unsuccessful initiative measure ("Proposition O") on the November 1979 ballot to limit height and floor area ratios of buildings in Downtown San Francisco. The proposed initiative would have limited the height of buildings in the C-3-G Zoning District to 130 ft. and the Basic Floor Area Ratio (FAR) to 5 to 1 (as opposed to the present basic FAR of 10 to 1). However, the maximum



SITE PLAN



PUBLIC ROOM FLOOR PLAN

FIGURE 33

ALTERNATIVE A – HIGHRISE FLOOR PLANS

FEET

50 0 50 100

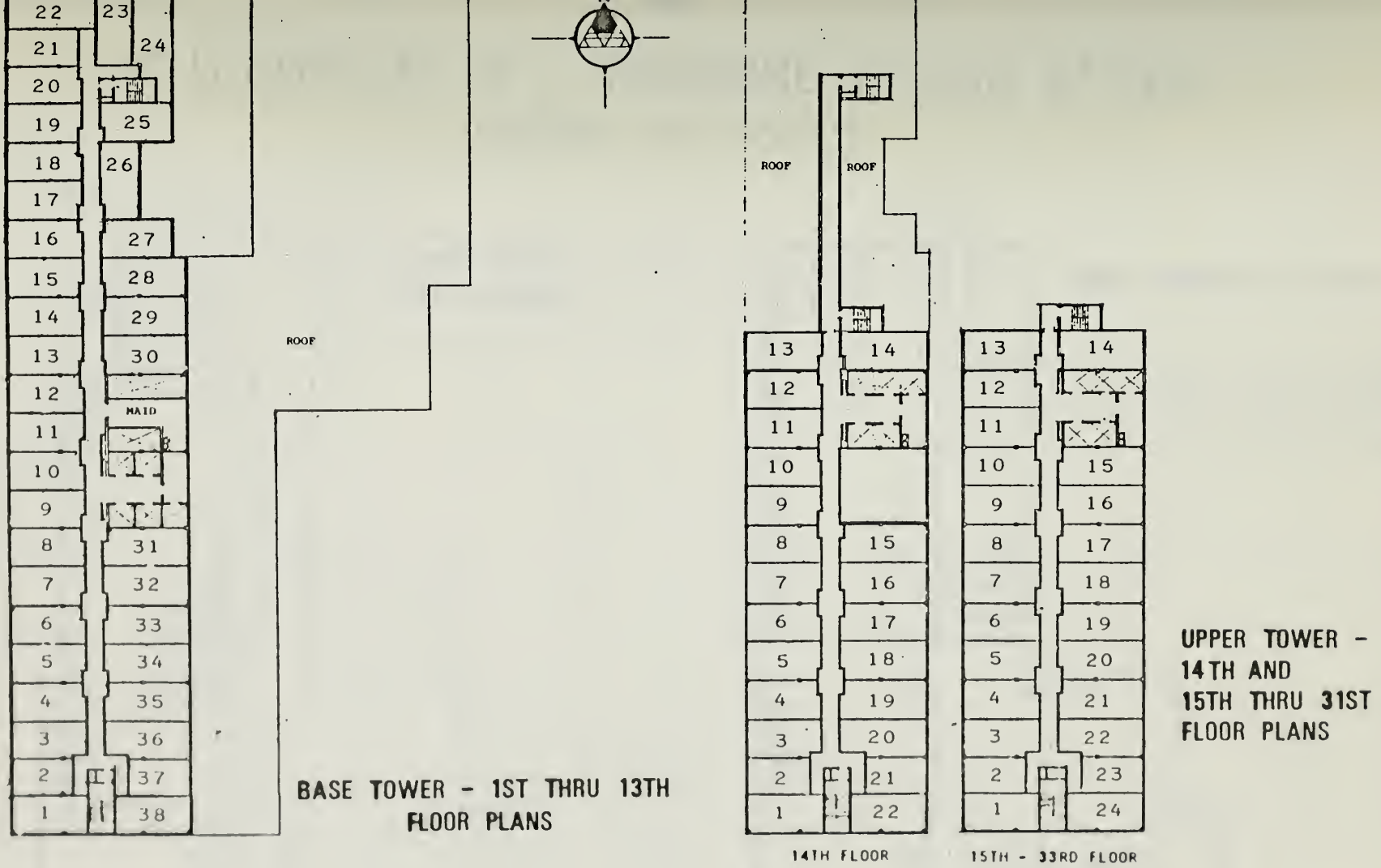
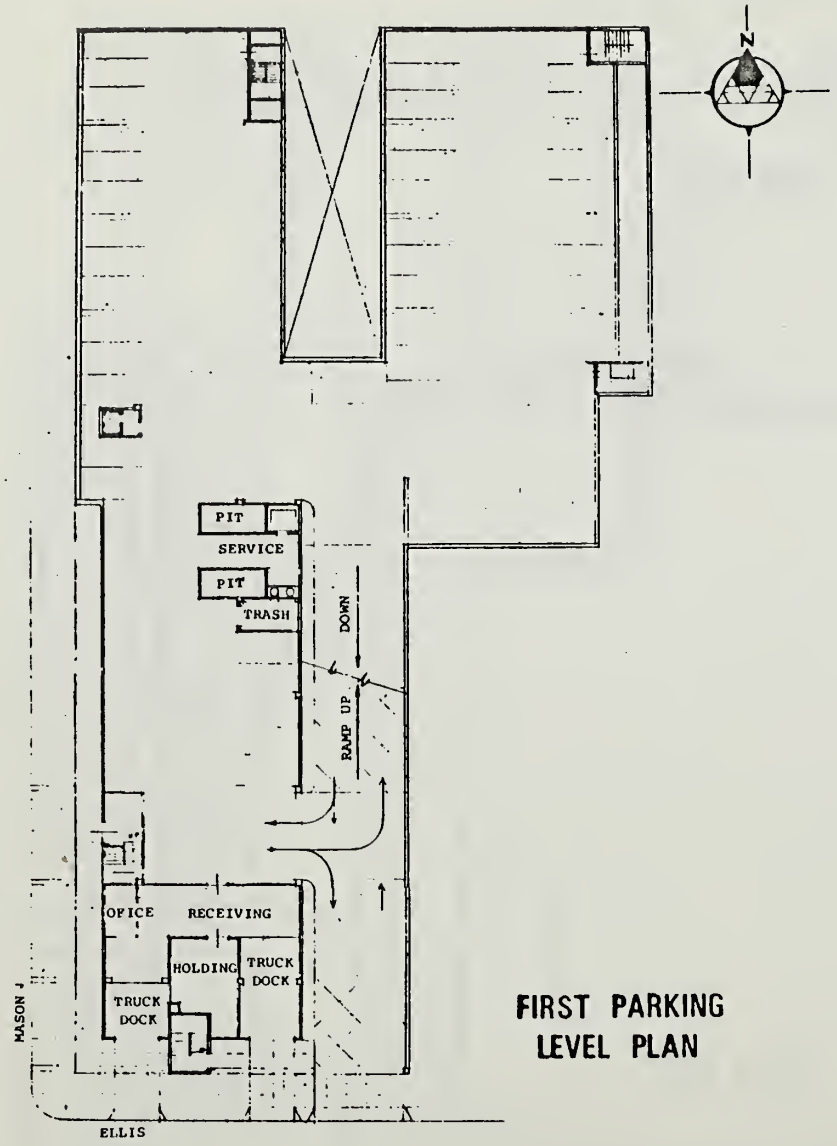
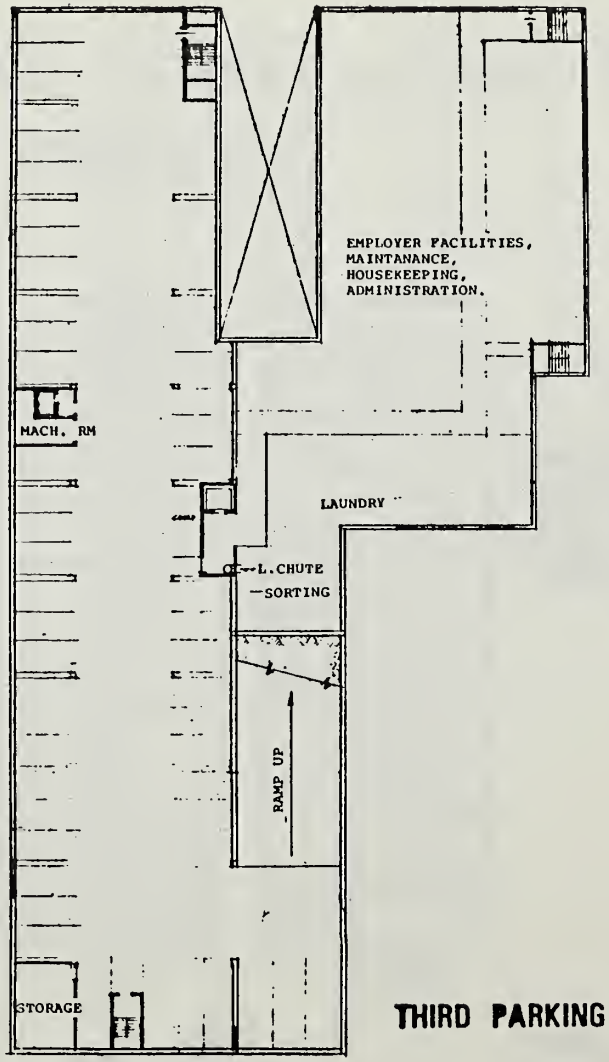


FIGURE 33 (CONT.)

ALTERNATIVE A – HIGHRISE FLOOR PLANS



FIRST PARKING LEVEL PLAN

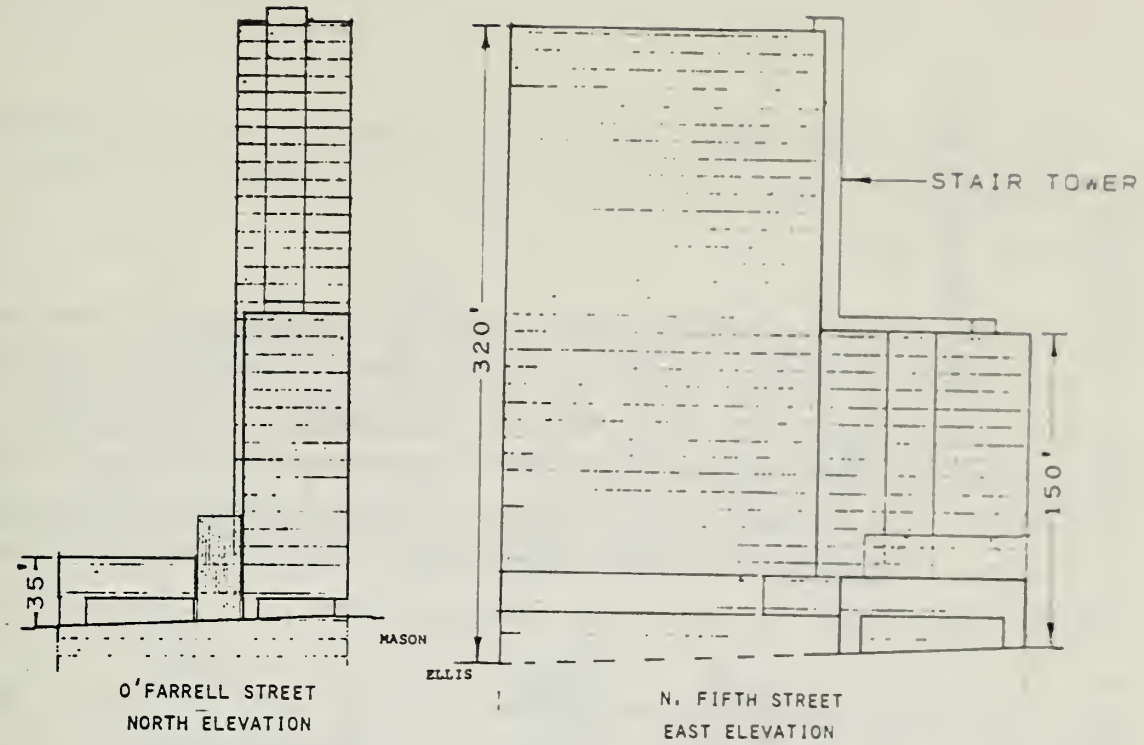


THIRD PARKING LEVEL PLAN

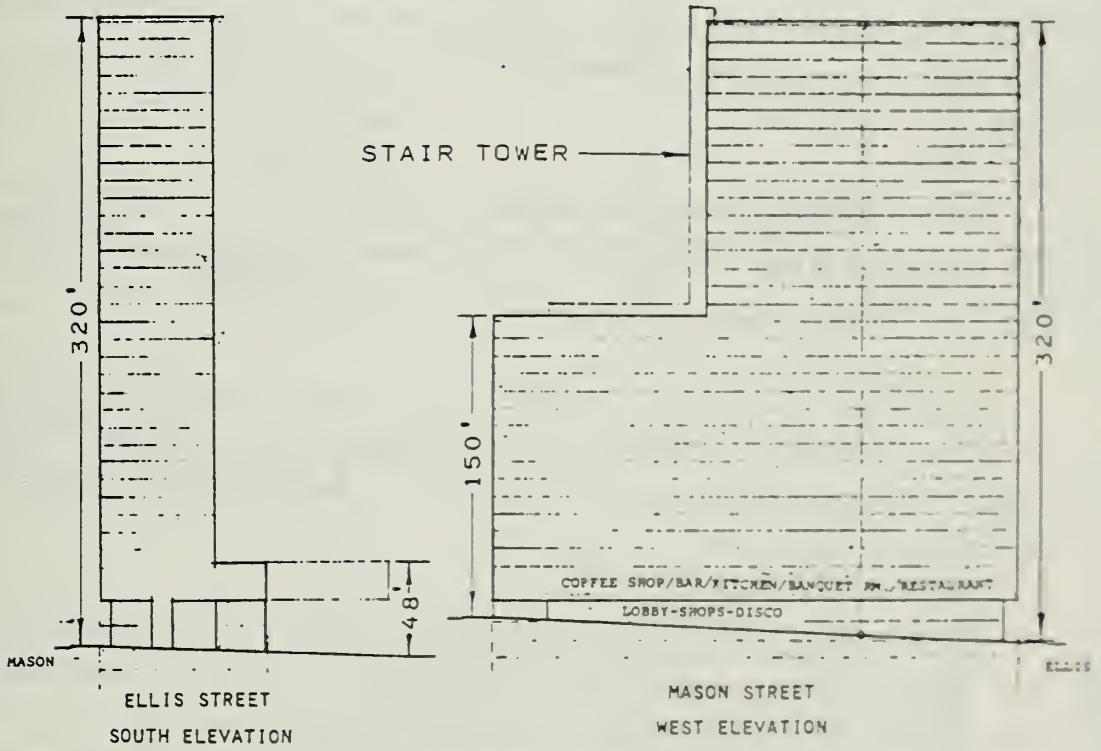
FIGURE 33 (CONT.)

ALTERNATIVE A – HIGHRISE FLOOR PLANS

FEET
50 0 50 100



O'FARRELL AND N. FIFTH STREETS ELEVATIONS



ELLIS AND MASON STREETS ELEVATIONS

0 50' 100'

FIGURE 34

ALTERNATIVE A – HIGHRISE ELEVATIONS

Floor Area Ratio limits set by the initiative, when including development bonuses, would have been 8 to 1 with the development of housing included in the project.

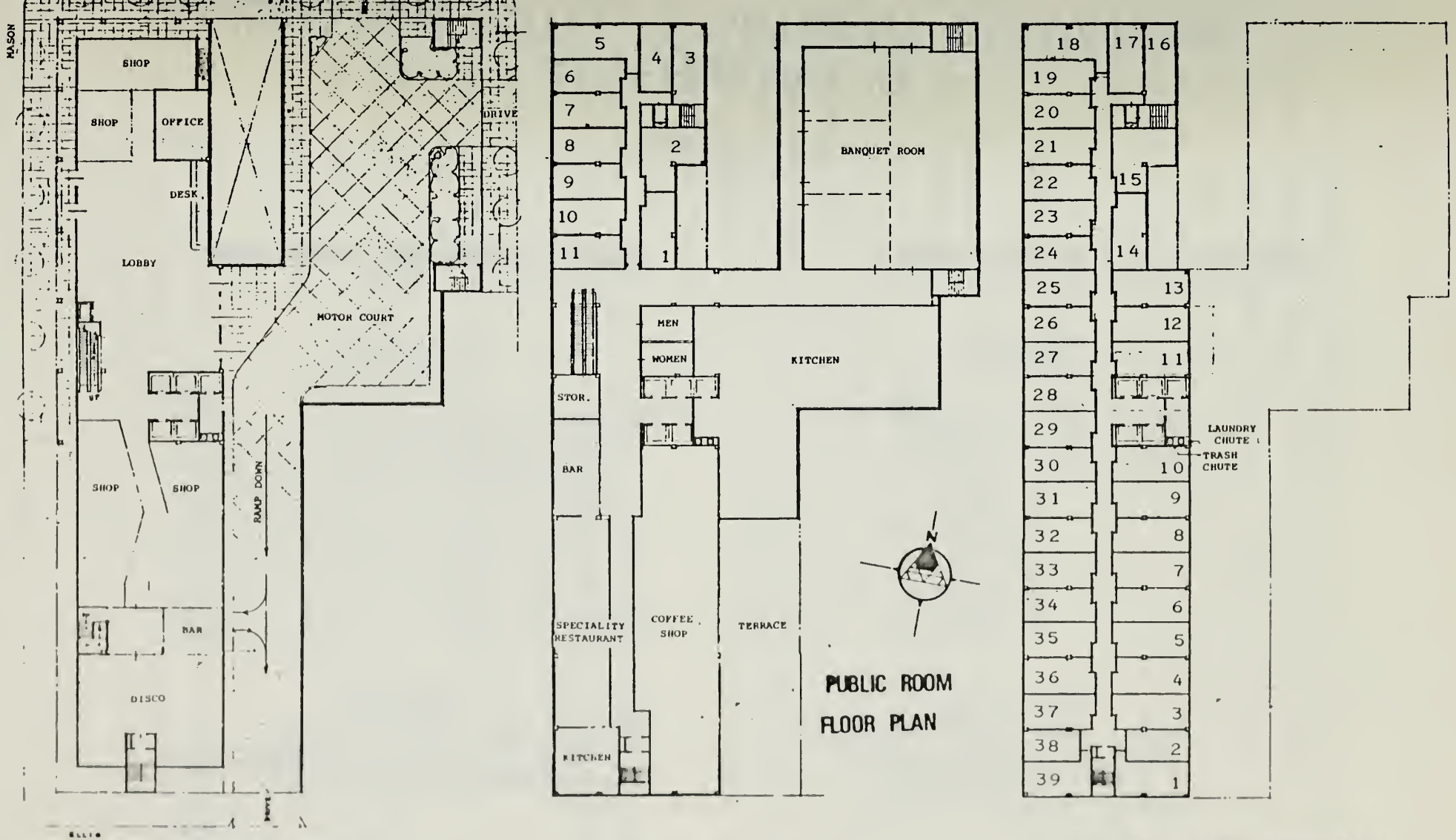
Under the "Combination Hotel/ Apartment Alternative," there would be 420 guest rooms and 49 two-room apartment units. Underground parking would be provided for 101 cars with delivery and loading facilities for the hotel provided on the 1st parking level. Figures 35 and 36, pp. 171 and 172, present plans and elevations for this "low-rise" scheme. The building would contain approximately 241,000 gross square feet of floor area above grade, about 169,000 sq. ft. (41%) less than the project.

No federally-subsidized housing would be provided within the project. The 49 apartment units are proposed for the upper stories of the tower and would generally be moderately-to-high priced, accommodating rentals for a period from one-month to a year in length. The exact rental fees of these units have not been estimated and would be set by the Holiday Inn Corporation at a later date. This alternative would not fulfill the need for low-cost housing in the area.

Vehicle access would be similar to that for the high-rise alternative with entrances from O'Farrell, N. Fifth and Ellis Streets and exits from the latter 2 only.

A terrace would be on the public room floor adjacent to the coffee shop, providing additional setback of the development from the adjoining Maria Manor Hotel. Potted plants would be placed along the terrace to enhance the visual amenities of the project.

Wind tunnel studies/2/ were conducted for this "low-rise" alternative. This project would increase west and northwest winds at the N. 5th and O'Farrell Streets intersection and the eastern side of the Mason and Ellis Streets intersection. Most of the other surrounding areas would remain relatively unchanged from the existing condition. Windspeed ratios would be similar to the proposed project.



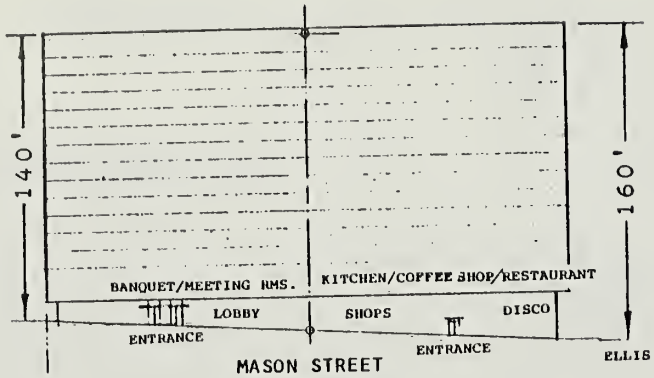
GROUND FLOOR PLAN

PUBLIC ROOM FLOOR PLAN

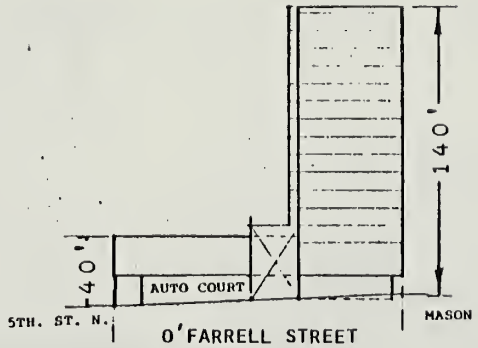
1ST THRU 13TH FLOOR PLAN

FIGURE 35

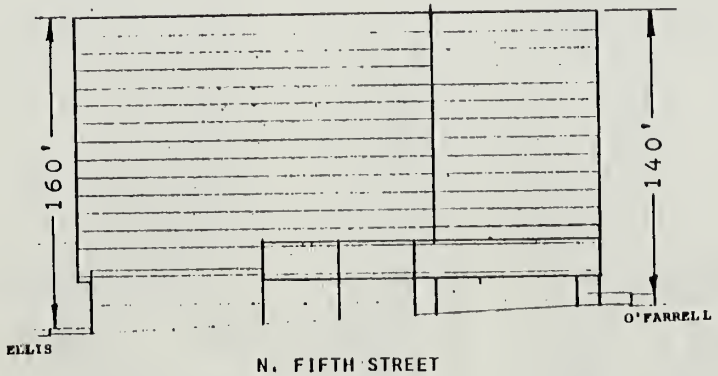
ALTERNATIVE B – COMBINATION HOTEL/APARTMENT FLOOR PLANS



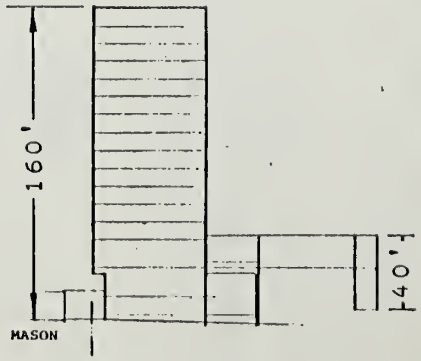
MASON STREET
WEST ELEVATION



O'FARRELL STREET
NORTH ELEVATION



N. FIFTH STREET
EAST ELEVATION



ELLIS STREET
SOUTH ELEVATION

MASON AND N. FIFTH STREETS ELEVATIONS

O'FARRELL AND ELLIS STREETS ELEVATIONS

0 50' 100'

FIGURE 36

ALTERNATIVE B – COMBINATION HOTEL/APARTMENT ELEVATIONS

The "Combination Hotel/Apartment Alternative" is not preferred by the project sponsors. Because of the present high land value in the area, the project sponsors would prefer the "highrise" alternative or the proposed project which would reduce the costs of land per sq. ft. of construction. Because of this high land value and due to structural requirements to underpin the neighboring buildings, maximizing of rooms is desired by the project sponsors in order to reduce the per room costs.

C. NO BONUS - ALTERNATIVE 'C'

Ordinance 240-80 of the San Francisco Board of Supervisors effective on 1 July 1980 calls for the elimination of floor area bonuses and corner premium provisions provided in Section 126 of the City Planning Code for the C-3 "Downtown Commercial" Zoning Districts. Under the "No Bonus Alternative", the allowable bonuses shown in Section IV.A, Table 5, p. 65, for rapid transit proximity, parking access, multiple building entrances, sidewalk widening, low coverage of upper floors and rooftop observation deck would be eliminated. The allowable 10:1 Floor Area Ratio would restrict development to approximately 301,000 gross square feet.

Under the "No Bonus Alternative" the project would include: a 4-story base building containing lobby, kitchen, banquet and coffee shop facilities; a 15-story tower with 525 guest rooms similar in design to the proposed project; and 2-levels of underground parking for 54 cars. Banquet and meeting facilities on Levels 2 thru 4 may be cut back in order to provide for additional rooms. The building would contain approximately 289,000 gross square feet of floor area, about 121,000 sq. ft. (29%) less than the proposed project. The building would contain 525 guest rooms, or 280 rooms (35%) fewer than the project. Ground floor public room facilities and guest floors would be similar to those for the proposed project as shown in Figures 4 thru 6, pp. 19 through 21.

Wind tunnel studies/3/ were conducted for the No Bonus Alternative and are contained in Appendix B, p. 208. Under northwest and west wind conditions there would be no difference from the changes induced by the proposed project.

Because of the high land value in the area, the project sponsor would prefer full development including the allowance for development bonuses which would reduce the costs of land per sq. ft. of construction.

D. NO PROJECT - ALTERNATIVE 'D'

This alternative would entail no change to the project site; the existing Fairway Rent-a-Car building and parking lot would remain. The Holiday Inn would continue to operate at its 5 present locations; Fisherman's Wharf, Chinatown, Union Square, Van Ness Avenue and Civic Center. With the No Project alternative, traffic and transit, air quality, wind, noise and service conditions and requirements and economic return to the City would continue at their present levels.

The present use of the site for parking is considered unreasonable by the project sponsor when considering the high land value of the area. The effects of inflation in the future would escalate construction and property costs for future developments.

NOTES - Alternatives

/1/Cahill Construction Co., Mr. William Cahill, Project Manager, telephone communication, 23 October 1980.

/2/Environmental Impact Planning Corporation, July 1979. "Microclimate Impact Study on the Proposed Mason & O'Farrell Project," San Francisco, CA. This report may be reviewed at the Office of Environmental Review, 45 Hyde Street.

/3/Environmental Impact Planning Corporation, October 1980. "Microclimate Impact Study on the Proposed Holiday Inn-Mason & O'Farrell Project," San Francisco, CA. See Appendix B, p. 206.

TABLE 27: COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HICHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
PROJECT DESCRIPTION					
Total Gross Floor Area Above Crade (sq. ft.) [exluding mechanical & observation]	410,000	427,000	241,000	289,000	200
- Cuest Rooms	347,000	388,000	162,000	226,000	N/A
- Apartment	None	None	45,000	None	N/A
- Leasable	2,000	5,000	6,000	2,000	N/A
Total Number of Rooms					
- Cuest	805	936	420	525	N/A
- Apartment	None	None	49 - 2-room units	None	N/A
Decrease or (Increase) from Project					
- Gross Floor Area (sq. ft.)	N/A	(17,000)	169,000	121,100	unspecified
- % Floor Area	N/A	(4%)	41%	30%	approx. 100%
Number of Stories (total)	27	33	15	19	1
- Base Building	4	2	2	4	1
- Tower	23	31	13	15	None
Setbacks on Tower	None	1 setback floor 14	None	1 setback floor 14	None N/A
Parking	3-underground levels 81 spaces	3-underground levels 161 spaces	2-underground levels 101 spaces	2-undergound levels 54 spaces	30,500 gross sq. ft. 80-100 spaces
Building Dimensions					
- Height (ft.)	300	320	150	193	N/A
- Length Lower Tower (ft.)	N/A	275	275	N/A	N/A
- Length Upper Tower (ft.)	132	160	N/A	132	N/A
- Diagonal Upper Tower (ft.)	190	170	N/A	190	N/A
Costs					
- Construction (1980 dollars)	$40.5 million	$42.1 million	$23.0 million	$28.8 million	N/A
- Room Rate (1983)	$82	$81	$85	$84	N/A
- 1st Yr. Annual Occupancy	69%	68%	72%	71%	N/A

TABLE 27 (Cont'd): COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HIGHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
PROJECT DESCRIPTION					
Code Conformity & Bonus Use	Including Development bonuses of 109,000 S.F.	Including Development bonuses of 126,000 S.F.	Conforms to November 1979 Initiative 'O'	Conforms to Code without development bonuses	N/A
Estimated Employment	360 full & part-time	415 full & part-time	250 full & part-time	260 full & part-time	8
LAND USE & ZONING	Would comply with 1980 land use, height, and bulk regulations including development bonuses at time of application; exceeds 10:1 FAR regulation without inclusion of development bonuses.	Similar to the proposed project.	Would comply with the proposed height limits of the unsuccessful November 1979 initiative 'O' when including development bonuses; would comply with proposed 8:1 FAR regulations of the November 1979 initiative 'O.'	Would comply with the current Ordinance 240-80 height, land use and bulk regulations; would comply the 10:1 FAR regulations without inclusion of development bonuses.	1-story structure for Rent-a-Car agency on site complying with existing height, bulk and land use regulations.
RELATIONSHIP TO THE COMPREHENSIVE PLAN					
Project Visibility Regional	Tower would be comparable in height to 27-story Hilton Hotel 35-story Holiday Inn at Union Square and 33-story St. Francis Hotel Tower in the area; upper portions of tower would be visible from some higher elevations in the City and the surrounding area; would be comparable to proposed Hotel Ramada and Hilton Tower No. 2 in height and visibility, although 20 ft. shorter.	Similar to the proposed project; would be equal in height to proposed Hotel Ramada and Hilton Tower.	Would be comparable in height to the lower (17-story) Hilton Hotel Tower immediately to the west of the site; upper portions of tower would be visible from some higher elevations in the city and the surrounding area; not visible from major view areas; would be 170 ft. smaller than the proposed Hotel Ramada and Hilton Hotel Tower No. 2 Projects in height.	Would be comparable in height to the lower (17-story) Hilton Hotel Tower immediately to the west of the site; upper portions of tower would be visible from some higher elevations in the City and the surrounding area; not visible from major areas; would be 83 ft. smaller than the proposed Hotel Ramada and Hilton Hotel Tower No. 2 Projects in height.	No effect.
Project Visibility Local	Would become prominent element in the visual setting conforming in height to the adjacent 27-story Hilton Hotel Tower structure.	Similar to the proposed project; Maria Manor would not be visible from lower floors of the Hilton Hotel or to Manon St. pedestrians.	Would become prominent element in the visual setting conforming in height to the lower (17-story) Hilton Hotel structure to the west of the site.	Similar to Alternative 'B'.	Would not diminish views for any existing highrise structures nor views from Maria Manor Hotel.

TABLE 27 (Cont'd): COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HIGHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
Views	Would block some views from adjacent Hilton Hotel Tower to the Downtown area.	Would block more views than the proposed project.	Would block fewer views than the proposed project.	Would block fewer views than proposed project but more views than Alternative 'B'.	Long range views would remain limited from ground level.
Demolition	Would require demolition of Fairway Rent-a-Car structure.	Would require demolition of Fairway Rent-a-Car structure.	Would require demolition of Fairway Rent-a-Car structure.	Would require demolition of the Fairway Rent-a-Car structure.	Would not require demolition of the Fairway Rent-a-Car structure.
Sunlight and Shadow Effects	Tower would cast shadows on nearby streets and buildings varying with time of day and season of the year. Tower would shadow portions of the adjacent Maria Manor Hotel in the late afternoon and evening.	Similar to the proposed project except tower shadows would be slightly longer.	Similar to the proposed project except tower shadows would generally be shorter.	Similar to the proposed project except tower shadows would be generally longer than the combination hotel/apartment alternative and shorter than the proposed project.	Existing parking lot remains unshadowed during the majority of the day.
Pedestrian Amenities	Retail shop in the porte cochere; street trees.	Street trees.	Retail shop; street trees.	Street trees.	Project site would continue to provide few, if any, pedestrian amenities.
Landscaping	Potted plants and schrubs at porte cochere and entries; trees would be planted along the sidewalk around the building's perimeter.	Landscaping would be provided at the motor court and O'Farrell Street entrances; trees would be planted along the sidewalk around the building's perimeter.	Same as the proposed project with some landscaping also provided at the terrace on the Public Room Floor.	Similar to Alternative 'A'	Project site would continue to provide no green space.

TABLE 27 (Cont'd): COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HIGHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
Circulation	Vehicle entry for guest drop-off on Ellis to porte cochere; exit of porte cochere on Mason; entry and exit to parking garage on Ellis St; loading facilities on N. Fifth Sts., Level 1; pedestrian entry to main lobby on O'Farrell St. at both corners and from porte cochere up elevators or escalators.	Pedestrian entry on 4 streets surrounding the site. Vehicle entrances on O'Farrell, N. 5th and Ellis Streets with exits at the latter 2. Loading facilities would be on the 1st parking level off Ellis St.	Same as Alternative 'A'	Same as proposed project.	Project site would remain fenced with pedestrian and vehicle entrances and exits on Ellis and Mason Sts.
ECONOMIC EMPLOYMENT AND FISCAL FACTORS					
Project Site Employment	360 full and part-time employees.	415 full-time and part-time employees.	250 full-time and part-time employees.	260 full-time and part-time employees.	8 full-time employees.
Construction Employment	370 person years.	385 person years.	220 person years.	265 person years.	None
Relocation	Fairway Rent-a-Car and parking lot businesses; 8 employees.	Same as the proposed project.	Same as the proposed project.	Same as the proposed project.	None
Property Tax (1980 dollars)	$405,000 - $507,000	$421,000 - $526,000	$230,000 - $288,000	$288,000 - $360,000	$35,000
Hotel Tax (1980 dollars)	$1.6 million	$1.8 million	$0.9 million	$1.1 million	N/A
Direct Sales Tax (1980 dollars)	$351,000	$402,000	$198,000	$241,000	$7,000

TABLE 27 (Cont'd): COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HICHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
TRANSPORTATION CIRCULATION & PARKINC					
Traffic	1,930 trips per day; 160 trips doring p.m. peak hour; changes in Level of Service at intersections of Mason and Eilis Streets from 'C' to 'D'; O'Farrell St. at times would continue to operate at Level 'F'; 2% increase in peak hour traffic on O'Farrell St. to 12% increase on Mason St.	2370 vehicle trips per day; 230 vehicles doring the pm peak hoor; change in vehicle Level of Service at intersection of Mason and Ellis Streets from 'C' to 'D'; O'Farreil St. at times woold continue to operate at Levei 'F'.	Probable 40 to 50% less trips than the proposed project; vehicle Levei of Service at intersection of Ellis and Mason Streets woold remain at 'C'; O'Farreil St. at times would continue to operate at Level 'F'.	Probable 25 to 35% less trips than the proposed project; change in vehicle Level of Service at intersection of Mason and Ellis Streets from 'C' to 'D'; O'Farrell St. at times woold continue to operate at Level 'F'.	Level of Service at intersections: O'Farrell/ Mason - 'A' O'Farrell/ N. 5th - 'A' Ellis/Mason - 'C' Ellis/ N. 5th - 'B'. O'Farreli at times woold continued to operate at Levei 'F'.
Parking	Eliminates 80-100 off-street spaces; creates on-site deficit of 171 spaces; 81 parking spaces for guests only.	Eliminates 80-100 off-street parking spaces; increases demand on other off-street parking spaces in the area; 161 spaces for guest parking.	Eliminates 80-100 off-street parking spaces; 101 spaces for guest and resident parking.	Eiiminates 80-100 off-street parking spaces; 54 spaces for guest parking.	80-100 off-street parking stalls.
Pedestrians	Pedestrian flow levels would remain "unimpeded" for Ellis Street; flow levels would change from "unimpeded" to "impeded" for Mason, N. 5th and O'Farrell Sts. Ground floor setbacks at O'Farrell St. would improve pedestrian flows and setback along Mason would improve visibility of vehicles entering and leaving the porte cochere.	Pedestrian activity on sidewalks woold increase but remain at same flow levels as the proposed project; groond floor setback would improve visibility of vehicles entering and leaving the motor court and the underground parking.	Similar to the proposed project, except smaller increase in pedestrian activity.	Similar to the proposed project, except smaller increase in pedestrian activity.	Pedestrian flow level on sidewalks would remain "unimpeded" during peak (5-6 p.m.) hour.

TABLE 27 (Cont'd): COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HIGHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
Transit	2350 trips per day; 520 trips for p.m. peak hour; 40% of employees estimated to use Muni; project would result in less than 1% increase in p.m. peak hour ridership; porte cochere and loading docks would reduce congestion of curbside loading and unloading and delays to transit schedules. Certain Muni routes would reach or exceed peak hour capacities by 1982 with construction of 21 proposed CBD projects. As ridership increases, delays would increase.	Similar to the proposed project except loading dock entry would be off Ellis St., motor court entry off O'Farrell St. would result in backups in the transit preferential lane along the south curb of O'Farrell St. and possible conflicts. Certain Muni routes would reach or exceed peak hour capacities by 1982 with construction of 21 proposed CBD projects. As ridership increases, delays would increase.	Similar to Alternate 'A', except smaller increase in transit use, particularly less for Airporter and cable cars. Certain Muni routes would reach or exceed peak hour capacities by 1982 with construction of 21 proposed CBD projects. As ridership increases, delays would increase.	Similar to the proposed project, except 35% increase over projected 1982 transit use without the project; 1530 trips per day; 340 trips for p.m. peak hour. Certain Muni routes would exceed peak hour capacities by 1982 with construction of 21 proposed CBD projects. As ridership increases delays would increase.	Certain Muni routes would reach or exceed peak hour capacities by 1982 with construction of 20 projects. As ridership increases, delays would increase.
AIR QUALITY					
Wind	Increased windspeed ratio along O'Farrell and N. 5th Sts. and Mason/N. 5th intersection under northwest winds, with decreased winds at 3 corners of Mason and O'Farrell intersection. Increased windspeed ratios along O'Farrell except for O'Farrell/Mason intersection under west winds.	Increased wind speeds along Ellis Street and at the N. 5th and O'Farrell Streets intersection; decreased winds at the Mason and O'Farrell Streets intersection; moderately high wind at entrance to the motor court on O'Farrell without construction of the Hotel Ramada or Hilton Hotel Tower No. 2 projects, and moderate winds with.	Increased west and northwest winds at the N. 5th and O'Farrell Streets intersection and the eastern side of the Mason and Ellis Streets intersection; most other areas would remain relatively unchanged; little change for the lowrise with or without construction of the Hotel Ramada or Hilton Tower No. 2 projects.	Similar to proposed project.	Wind speeds could continue varying from low to high, with strongest winds occurring at the Mason and O'Farrell Streets intersection.

TABLE 27 (Cont'd): COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HIGHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
Construction Air Quality	Particulate concentrations would create a local nuisance during the excavation period.	Effects would be essentially the same as the proposed project.	Effects would be essentially the same as the proposed project.	Effects would be essentially the same as the proposed project.	No effect.
Operational Air Quality	Increased carbon monoxide, hydrocarbons, nitrogen oxides, particulates and sulfur oxides during inversions; project would contribute less than 0.06% to the total regional omissions in 1985.	More emissions than the proposed project.	Less emissions than the proposed project.	Less emissions than the proposed project and Alternative 'B'.	Total emissions would be less than the proposed project.
NOISE					
Construction	Complaints of daytime sleep interference for residents at the Maria Manor Hotel may arise, particularly for units with open windows.	Same as the proposed project, except possible 1-month increase in construction period.	Same as the proposed project, except construction period shorter.	Same as the proposed project, except construction period would be shorter than proposed project but longer than Alternative 'B'.	No effect.

TABLE 27 (Cont'd): COMPARISON OF ENVIRONMENTAL EFFECTS OF PROJECT ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

	PROPOSED PROJECT	ALTERNATIVE 'A' HIGHRISE	ALTERNATIVE 'B' COMBINATION HOTEL/ APARTMENT	ALTERNATIVE 'C' NO BONUS	ALTERNATIVE 'D' NO BUILD
ENERGY					
Connected Kilowatt Load	Heat Pump System: 2270 KW; 4-Pipe Fan-Coil System: 2050 KW.	Similar but larger than the proposed project.	Similar but smaller than the proposed project, and smaller than Alternative 'C'.	Similar but smaller than the proposed project, and larger than Alternative 'B'.	Minimal use.
Average Monthly Electrical Consumption	Heat Pump System: 608,000 KWH; 4-Pipe Fan-Coil System: 478,000 KWH.	Similar but larger than the proposed project.	Similar but smaller than the proposed project, and smaller than Alternative 'C'.	Similar but smaller than the proposed project, and greater than Alternative 'B'.	Minimal use.
Peak Daily Average Natural Gas Consumption	Heat Pump System: 3215 Cu. Ft./Hr. 4-Pipe Fan-Coil System: 4950 Cu. Ft./Hr.	Similar but larger than the proposed project.	Similar but smaller than the proposed project, and smaller than Alternative 'C'.	Similar but smaller than the proposed project, and greater than Alternative 'B'.	Minimal use
Average Monthly Natural Gas Consumption	Base System: 13,400 Therms; Alternate 4-Pipe System: 24,000 Therms.	Similar but larger than the proposed project.	Similar but smaller than the proposed project and smaller than Alternative 'C'.	Similar but smaller than the proposed project, and greater than Alternative 'B'.	Minimal use.
SEISMIC HAZARD					
	Strong ground shaking would cause swaying of the tower and possible damage of exterior panels and glass.	Similar to the proposed project, but more glass area.	Similar to the proposed project, swaying and hazard from falling material would be less due to a lesser tower height, same as Alternative 'C'.	Similar to the proposed project, swaying and hazard from falling material would be less due to a lesser tower height; same as Alternative 'B'.	Not much hazard in a 1-story structure.

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San Francisco, CA 94104
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Women's Chamber of Commerce
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San Francisco, CA 94105

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APPENDIX A: TRANSPORTATION, CIRCULATION AND PARKING

Prepared by John J. Forristal, Consulting Traffic Engineer
and Dames & Moore

METHODOLOGY USED FOR THE TRAFFIC ANALYSIS

The capacity analysis of each intersection surrounding the project site at which a turning movement count was made used the "critical lane" method of analysis. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: a Planning Tool" by McInerney, Henry B. and Stephen G. Peterson, January 1971, Traffic Engineering). A maximum service volume for Level of Service "E" is defined in standard practice as the intersection capacity. The service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table A-2, p. 200, for a description of service levels). For each intersection analyzed, the existing p.m. peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the computed capacity.

The intersection volume/capacity ratios for the 4 intersections surrounding the project site were calculated as follows:

	V/C Ratio	Level of Service
O'Farrell - Mason	0.57	A
O'Farrell - Fifth St. North	0.52	A
Ellis - Mason	0.76	C
Ellis - Fifth St. North	0.61	B

The O'Farrell St. intersections intermittantly operate at Level F. This is due primarily to traffic congestion at the intersection of Powell and O'Farrell Streets from conflicts with pedestrian flows and left-turn vehicle

movements. The existing Mason and N. Fifth Street intersections with O'Farrell St. under existing traffic volumes are sufficient to accommodate traffic at Level of Service "A" if downsite congestion is eliminated.

In the above calculations, allowances were made for the heavier than normal pedestrian traffic by reducing the standard lane capacity values by 50%.

METHODOLOGY USED FOR CONVENTION-GENERATED CUMULATIVE TRIP ANALYSIS

A joint convention at the 3 hotels, with a large attendance by local people, would result in an increase in transit and pedestrian traffic. Modes of traffic and trip generation for this case are unknown. To determine the impacts of such a convention, trip generation and assignments were identified from the Yerba Buena Convention Center Final Environmental Impact Report./1/ This information was used to calculate trips per gross sq. ft. of facility under each of the transportation modes. These figures were then multiplied by the gross square footage of meeting and banquet facilities for the 3 hotels. Weekday trip generation during the peak hour for YBC was calculated at 12,000 person trip ends for the 225,000 sq. ft. of main exhibit hall.

Under "best" case conditions for YBC (YBC, p. 40e), attendance would be made up 37% by out of town delegates and 63% by local visitors. Outbound p.m. peak hour person trip ends would represent about 80% of the total trips (YBC, p. 65). Of the 12,000 person trip ends from the convention center in the p.m. peak hour, about 4,400 trip ends (37%) are pedestrian trips only. The remaining 7,600 trip ends are made up 47% by auto, 36% by Muni, 6% by BART and 11% by other transit (YBC), pp. 84 and 86.

Person trip ends per sq. ft. of hall are as follows:

Mode of Travel	Person Trip Ends/ 1000 Sq. Ft. (Outbound Only)
Walk	43
Auto	13
Muni	10
BART	2
Other	3
Total	71

An approximate breakdown of areas of new banquet and meeting room facilities for the 3 proposed hotels is as follows:

Hotel	Gross Floor Area (sq. ft.)
Hotel Ramada	38,000
Hilton Hotel Tower No. 2	31,000
Holiday Inn	24,000
Total	93,000

At the estimated 71 person trip ends per 1,000 sq. ft. of meeting space, the 3 hotels would generate 6,600 person trips during the p.m. peak hour. Seating capacity for meeting rooms and banquet spaces is designed at 7-15 persons per sq. ft./2/ Typically for a convention, when meeting rooms are at full capacity, the banquet facility would be only partially used, with the remaining 1/2 set up for the evening banquet or exhibit space./2/ Under these design conditions and an estimated 10 sq. ft./person, the total capacity of meeting space would be approximately 9,300 persons for the 3 hotels. Of this capacity 6,600 persons (71% of the capacity) would exit the hotels during the p.m. peak hour.

The Holiday Inn typically restricts reservations so that convention delegates would not exceed 40% of the hotel's capacity. This figure is similar to the 37% out-of-town attendance projected for YBC. Convention-generated trips were added to guests and employee-generated trips. Guest trips based on the Hilton Hotel survey were reduced by 37% to account for those delegates who are also guests at one of the hotels.

NOTES: Transportation, Circulation and Parking

/1/San Francisco Department of City Planning, 25 April 1978. "Final Environmental Impact Report - Yerba Buena Center - Appendices," EE 77.220. References are designated within the text as (YBC, pg. no.)

/2/Seating capacities based on data contained in the Uniform Building Code, Table 33A, 1976, showing seating capacities for meeting rooms of 7-15 sq. ft./person, and information provided by Holiday Inn, Inc. U.S. Hotel Division, Mr. Richard Bishop, Hotel Architect - Projects Development, personal communication, 24 October 1980.

TABLE A-1: STREET RIGHT OF WAY CHARACTERISTICS - HOLIDAY INN VICINITY+

Street	Block	Direction of Flow	Number Lanes	Width of Lanes(ft.)	Side of Street & Effective Width of Sidewalks(ft.)	
5th St. No.	O'Farrell-Ellis (site)	N	2 park	7	W-7	E-7
			2	15		
	Ellis-Eddy	N	1 park - RT	11	W-6	E-7
			1 park	7		
			2	12		
Eddy	5th St. No.-Mason	E	2 park	7	N-9	S-10
			1 (center)	10		
			2	10		
	Mason-Taylor	E	2 park	7	N-9	S-9
			1 (center)	10		
			2	10		
Taylor	Eddy-Ellis	N	1 park	7	W-8	E-7
			1 (center)	10		
			2	12		
	Ellis-O'Farrell	N	2 park	7	W-6	E-6***
			1 (center)	10		
			2	12		
	O'Farrell-Geary	N	2 park	7	W-6	E-7
			1 (center)	10		
			2	12		
Geary	Taylor-Mason	W	1 park-thru	10	N-7	S-6
			1 park-thru	6		
			1*	12		
			2	9		
	Mason-Powell	W	1 park-thru	10	N-8	S-12
			1 park-thru *	10		
			2	9		

Cont.

TABLE A-1: STREET RIGHT OF WAY CHARACTERISTICS (cont.)

Street	Block	Direction of Flow	Number Lanes	Width of Lanes(ft.)	Side of Street & Effective Width of Sidewalks(ft.)	
Powell	Geary-O'Farrell	N - S	2 park	7-1/2	W-10	E-9
			2	11		
	O'Farrell-Ellis	N - S	2 park	7-1/2	W-10	E-9
			2	11		
	Ellis-Market	Mall - Cable Cars and Pedestrians				
Ellis	Powell-5th St. No.	W	2 park	7	N-7	S-8
			1 (center)	10		
			2	10		
	5th St. No.-Mason (site)	W	2 park	7	N-9	S-9
			3	10		
	Mason-Taylor	W	1 park	7	N-9	S-6
			1 park	6		
			1 (center)	11		
			2	10		
O'Farrell	Taylor-Mason	E	1-park-thru *	10	N-10	S-6***
			2	9		
			1	10		
	Mason-5th St. No.	E	1 park-thru **	10	S-11	N-9
			2	9		
			1 (center)	10		
	5th St. No.-Powell	E	1 park *	10	S-11	N-10
			2	9		
			1 (center)	10		
Mason	Geary-O'Farrell	S	2 park	7	W-8	E-11
			2	12		
	O'Farrell-Ellis	S	2 park	7	W-7	E-12
			2	12		

Cont.

TABLE A-1: STREET RIGHT OF WAY CHARACTERISTICS (cont.)

Street	Block	Direction of Flow	Number Lanes	Width of Lanes(ft.)	Side of Street & Effective Width of Sidewalks(ft.)	
Mason, cont.	Ellis-Eddy	S	2 park	7	W-10	E-9
			2	12		

+ The study area was bounded by Fifth St. North, Eddy, Taylor, Geary, Powell and Ellis Sts.

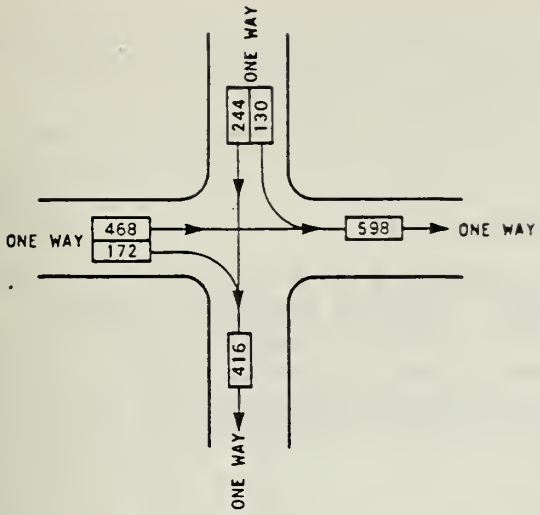
* Diamond Lane

** Diamond Lane is on the south, site side of the street

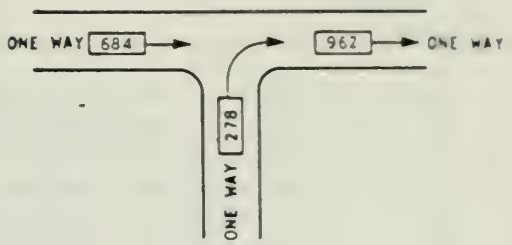
*** 7 1/2 ft. width indentation in sidewalk area along specified curb used as a loading zone

Source: On-site field evaluation conducted by John J. Forristal, Consulting Traffic Engineer, Sunday, 17 February 1980.

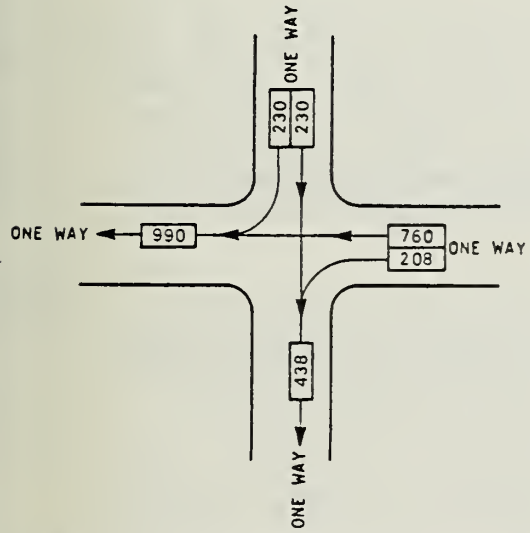
Note: Where parking stalls were not marked, the evaluation of parking and traffic lane uses were estimated for the prevailing conditions. Lane widths may vary somewhat to account for narrower parking lanes and wider adjacent travel lanes in some cases.



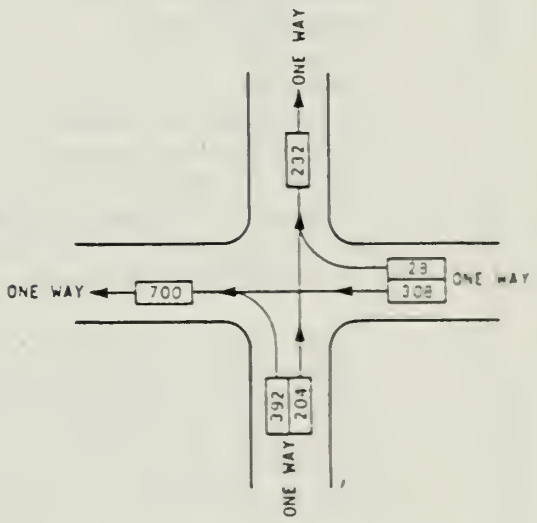
LOCATION Mason Street and O'Farrell Street
PERIOD 4:30 - 5:30 P.M. - Friday 7/20/79



LOCATION 5th Street North and O'Farrell Street
PERIOD 4:30 - 5:30 P.M. - Friday 7/20/79



LOCATION Mason Street & Ellis Street
PERIOD 5:00 P.M. - 6:00 P.M. Friday 7/20/79



LOCATION 5th Street North and Ellis Street
PERIOD 4:00 P.M. - 5:00 P.M. Friday 7/20/79

FIGURE A-1
EXISTING 1979 INTERSECTION TURN MOVEMENTS IN THE PROJECT VICINITY

SOURCE: JOHN FORRISTAL, TRAFFIC CONSULTANT

TABLE A-2: TRAFFIC LEVELS OF SERVICE

Level of Service	Description	Volume/Capacity v/c Ratio
A	Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.	<0.60
B	Level of Service B is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. The lower limit (lowest speed, highest volume) of this level of service has been associated with service volumes used in the design of rural highways.	0.61-0.70
C	Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained, with service volumes perhaps suitable for urban design practice.	0.71-0.80
D	Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.	0.81-0.90
E	Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.	0.90-1.00
F	Level of Service F describes forced flow operation at low speeds, where volumes are above capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.	>1.00

Source: Highway Research Board, Highway Capacity Manual, Special Report No. 87, 1965; adapted for use by the Office of Environmental Review, 45 Hyde St., San Francisco.

TABLE A-3: OFF STREET PARKING AVAILABLE IN THE PROJECT VICINITY

Number[1]	Lot Location	Spaces Total	Spaces Rented	Load	Unload	Weekday Turnover	Weekday Vacancy	Weeknight Vacancy	Saturday Vacancy	Sunday Vacancy
1-3	190 Ellis Street	80	10	9-10	4-6	(This is site of the Holiday Inn project)				
4	60 Ellis Street	1,000	200	8-12	4-6	1.3	200	800	600	700
5	80 Ellis Street	83	10	9-11	4-6	1.2	3	12	10	3
6	70 Eddy Street	150	45	10-11	4-6	(This is the site of the Hotel Ramada project)				
7	530 Taylor Street	110	50	11-2[2]	1-2	3.0	0	0	60	60
8	325 Mason Street	914	500	4-7	11-1:30 am[3]	2.0	200	200	600	600
9	165 Mason Street	20	0	7-8	3-4	2.0	0	0	6	19
10	121 Mason Street	47	0	7-8	3-4	2.0	0	0	20	38
11	15 Mason Street	200	100	8-9	4-6	1.5	70	20	70	80
12	120 Taylor Street	19	0	11-12	7-8	2.0	0	10	10	10
13	149 Eddy Street	32	NA	NA	NA	NA	-	NA	2	16
14	Eddy/Taylor Streets	65	NA	NA	NA	NA	-	NA	17	53
15	261 Ellis Street	350	100	8-11	5-6	1.1	75	200	150	200
16	Fifth St. Garage	1,800	0[4]	5-9	by 7[5]	2.0	50-100	1,700	100-150	1,200
17	400 Taylor	150	0	10	4-5	0.6	50	20	15	40
18	141 Taylor	33	NA	NA	NA	NA 2	NA	30	30	
19	60 Turk	92	50	12-2[3]	5	1.1	0[6]	0[6]	0[6]	0[6]
20	Hilton Hotel	213	0	NA	NA	0.5	110	100	NA	NA
Totals		5,358	1,065				766-816	3,062		

(1) Numbers correspond to those on Figure 19, p. 48

(2) Second Load period 6-8 p.m.

(3) Second Load period 6-10 p.m. - Second unload period 4-7 p.m.

(4) Non-reserved, special rate use is 200 stalls

(5) Shopper traffic loads and unloads throughout the day between 8 a.m. and 7 p.m.

(6) Theatre times.

NA: Not Available

Source: Survey of lot operators and on-site measurements conducted by John J. Forristal, Consulting Traffic Engineer, Wednesday, 18 July 1979, and Saturday, 16 February 1980.

TABLE A-4: ON STREET PARKING AVAILABLE IN THE PROJECT VICINITY

Street	Block	Metered Stalls	Limit (Min)	Metered Truck Loading Stalls	Limit (Min)	Yellow Zones	White Zones	Other Zones
Eddy	5th St. No.-Mason	3	30	1	30	2		
	Mason-Taylor	16	30	3	30	3	1	
	Taylor-Jones	18	60			4	3	
Ellis	Stockton-Powell	6	30	2	30	6		
	Powell-5th St. North	4	30	1	30	3	3	
	5th St. No.-Mason	3	30	3	30	1	1	
	Mason-Taylor	13	30			4	4	
	Taylor-Jones	12	60			4	4	
Geary	Grant-Stockton			11	30	4		
	Stockton-Powell					3	4	
	Powell-Mason	3	30	6	30	4	3	
	Mason-Taylor	10	30	4	30	4	2	
	Taylor-Jones	15	60			2	3	
Grant	Geary-O'Farrell	8	30	4	30	3	1	
Mason	Turk-Eddy	10	30			2	2	
	Eddy-Ellis	8	30	4	30	3	1	
	Ellis-O'Farrell	10	30				1	
	O'Farrell-Geary							1 Taxi
	Geary-Post	2	30	2	30	4	2	
	Post-Sutter	8	30			5	1	
Post	Grant-Stockton			6	30	4	4	
	Stockton-Powell			2	30	4	3	
	Powell-Mason	4	30	2	15	4	5	1 Taxi
	Mason-Taylor	6	30	3	30	2	4	
	Taylor-Jones	15	60			2	5	

Cont.

TABLE A-4: ON STREET PARKING AVAILABLE IN THE PROJECT VICINITY (cont.)

Street	Block	Metered Stalls	Limit (Min)	Metered Truck Loading Stalls	Limit (Min)	Yellow Zones	White Zones	Other Zones
Taylor	Golden Gate-Turk	7	30	5	30	3	2	
	Turk-Eddy	5	30	4	30	3	3	
	Eddy-Ellis	7	30	4	30	1	-	
	Ellis-O'Farrell	4	30	1	30	1	3	1 Taxi
	O'Farrell-Geary	3	30	3	30	2	4	
	Geary-Post	5	30	2	30	4	2	
	Post-Sutter	13	30	1	30	3	2	
Turk	Taylor-Mason	13	30	3	30	2	2	
	Taylor-Jones	14	60			4	1	
Jones	McAllister-Golden Gate	13	30			3	2	
	Golden Gate-Turk	9	60			1	2	
	Turk-Eddy	14	60	1	15	4	2	
	Eddy-Ellis	16	60			1	2	
	Ellis-O'Farrell	20	60			1		
	O'Farrell-Geary	13	60			2	4	
	Geary-Post	15	60				2	
	Post-Sutter	15	60				1	
O'Farrell	Grant-Stockton	4	30	3	30	3	1	
	Stockton-Powell			2	30	4	3	
	Powell-5th St. No.	1	30	2	30	3	4	
	5th St. No.-Mason	3	30	2	30	1		
	Mason-Taylor	6 No Limit Stalls in future loading zone					1	
	Taylor-Jones	1	30	4	30	3	4	
Powell	Ellis-O'Farrell					4	4	1 Taxi
	O'Farrell-Geary					4	3	2 Taxi
	Geary-Post						2	1 Taxi
	Post-Sutter						2	1 Taxi
Stockton	Ellis-O'Farrell	2	30	5	30	3		
	O'Farrell-Geary	5	30	5	30	1	2	
	Geary-Post					2	2	
	Post-Sutter	4	30	4	30	2	4	

TABLE A-4: ON STREET PARKING AVAILABLE IN THE PROJECT VICINITY (cont.)

Street	Block	Metered Stalls	Limit (Min)	Metered Truck Loading Stalls	Limit (Min)	Yellow Zones	White Zones	Other Zones
Golden Gate	Jones-Taylor	12	60	5 Stalls taken up by construction zone				
Market	Stockton-Grant							1 Ldg. Bay
	Stockton-Powell							2 Ldg. Bays
	Mason-Taylor							3 Ldg. Bays
	Taylor-Jones							2 Ldg. Bays

Source: San Francisco Division of Traffic Engineering records and on-site field measurements conducted by John J. Forristal, Traffic Engineering Consultant, Wednesday, 18 July 1979, and Saturday, 16 February 1980.

TABLE A-5: PEDESTRIAN FLOWS

Flow Regime	Walking Speed Choice	Conflicts	Average Flow Rate (P/F/M)*
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5-2
Impeded	Some Selection	High Indirect Interaction	2-6
Constrained	Some Restriction	Multiple	6-10
Crowded	Restricted	High Probability	10-14
Congested	All Reduced	Frequent	14-18
Jammed**	Shuffle Only	Unavoidable	18**

* P/F/M = Pedestrians per foot of sidewalk width per minute.
** For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

Source: Pushkarev, Boris and Jeffry M. Zupan, Urban Space for Pedestrians, Cambridge, MA, MIT Press, 1975.

APPENDIX B: MICROCLIMATE IMPACT STUDY

Prepared by Environmental Impact Planning Corporation and
edited by Dames & Moore

I. INTRODUCTION

Architects, engineers, and city planners designing urban structures are limited by the lack of information on wind effects due to structures, such as discomfort for pedestrians and wind-caused mechanical problems with doors, windows, and ventilating systems. Once a structure is built, remedial measures (if they exist at all) are usually expensive.

It is virtually impossible to anticipate, by analysis or intuition, the winds that will be caused by a structure, as they are determined by complex interactions of forces. Fortunately it is possible to predict the wind patterns and pressures around structures by testing scale models in a wind tunnel that can simulate natural winds near the ground. This allows the designer to foresee possible environmental and mechanical problems and alleviate them before the building is erected.

Data from wind tunnel tests can be combined with climatological data in analysis of the effect of a proposed structure on pedestrians in terms of human comfort. The frequency distribution of wind strengths at pedestrian level, combined with temperature data and shadow patterns of the proposed structure and its surroundings, can be used to forecast comfort at pedestrian levels.

II. BUILDING AND SITE DESCRIPTION

The proposed project site is located in downtown San Francisco and is bordered by Mason, O'Farrell, N. 5th and Ellis Streets. Currently the site is used as a parking area.

The proposed project would consist of a 27-story, U-shaped hotel tower fronting O'Farrell Street, and a 4-story building extending to the Ellis/Mason corner (see Figure B-2, p. 214). Automobile access would be from Mason and Ellis Streets.

An alternative project design, designated the No-Bonus Alternative, would be similar to the proposed project but would have a hotel tower of 19 stories and would be 83 feet shorter than the proposed project.

Two other nearby hotel projects, the Hilton Tower, west of the site, and the Ramada Inn project, south of the site, were included in the model placed in the wind tunnel.

III. MODEL AND WIND TUNNEL FACILITIES

Model

Scale models of the proposed buildings and the structures surrounding the area for a distance of several blocks were constructed of polystyrene and urethane foams at a scale of 1 inch equals 30 feet. Building configurations and heights were obtained from the Sanborn maps at the San Francisco Department of City Planning and site visits.

Wind Tunnel Facilities

The Environmental Impact Planning Corporation boundary layer wind tunnel was designed specifically for testing architectural models. The working section is 7 feet wide, 43 feet long, and 5 feet high. Wind velocities in the tunnel can be varied from 3.5 mph to 13 mph. The flow characteristics around sharp-edged objects, such as architectural models, are constant over the entire speed range. Low speeds are use for tracer smoke, high speeds for windspeed measurements.

Simulation of the characteristics of the natural wind is facilitated by an arrangement of turbulence generators and roughness upwind of the test section. These allow adjustments in wind characteristics to provide for different scale models and varying terrain upwind of the project site.

Measurements of windspeed around the model are made with a hotwire anemometer, a device that relates the cooling effect of the wind on a heated

wire to the actual windspeed. The flow above the city is measured by a Pitot tube connected to micromanometer. The Pitot tube and the micromanometer measure directly the pressure difference between moving and still air. This pressure difference is then related to the actual windspeed. Flow visualization is achieved by use of floodlit smoke.

IV. TESTING METHODOLOGY

Simulation of Flow

The most important factors in assuring similarity between flow around a model in a wind tunnel and flow around the actual building are the structure of the approach flow and the geometric similarity between the model and the prototype. A theoretical discussion of the exact criteria for similarity is not included in this paper, but may be found elsewhere (Cermak, 1966, or Cermak and Arya, 1970).

The variation of windspeed with height (wind profile) was adjusted for the scale of the model and the type of terrain upwind of the site. The profiles used were those generally accepted as adequately describing the flow over that type of terrain (Lloyd, 1967).

Testing Procedure

The windflow characteristics of the site in its current state were investigated to ascertain the present wind environment. Windspeeds and wind directions at specified points throughout the site were measured and recorded. Wind direction was measured by releasing smoke at each point and recording the direction in which the smoke traveled. Windspeed measurements were made at the same points, at a scale height of 5 feet above the ground. A hotwire anemometer probe is required to make these measurements within a fraction of an inch of the model surfaces. The probe is repeatedly calibrated against the absolute reading of a Pitot tube and micromanometer. Velocity readings close to the model are generally accurate to within 10% of the true velocity.

Measurements for the building are made by keeping the probe in place while replacing the existing buildings with each proposal under consideration.

Before and after each test run, a calibration measurement was made above the model. The purpose of these measurements was to relate the wind tunnel measurements to actual wind records from the U.S. Weather Service wind instrumentation located on the Federal Building at 50 Fulton Street.

V. TEST RESULTS AND DISCUSSION

Tests of windspeed and wind direction were conducted for 2 wind directions.

Measured windspeeds are expressed as percentages of the calibration windspeed. Calibration windspeeds are the actual windspeeds at the San Francisco Weather Station. Thus, a plotted value of 52 means that the measured windspeed is expected to be 52% of the windspeed recorded by the Weather Service when winds are from that particular direction.

The plotted values can be interpreted in terms of general "windiness" using the scale below. This scale is subjective and is based on information gathered from similar studies in San Francisco.

Velocity	Percentage of Calibration Windspeed
Low	0-0.19
Moderately low	0.20-0.29
Moderate	0.30-0.49
Moderately high	0.50-0.69
High	0.70-1.00
Very High	>1.00

>greater than

The plotted values are not actual windspeeds, but ratios. Thus, a point having a "very high" windspeed ratio would still experience light winds on a near-calm day. Likewise, a point found to have "low" winds could experience significant winds on a windy day.

Wind direction is indicated by an arrow pointing in the direction of flow. Where wind direction fluctuated, two arrows representing the principal flow direction were plotted.

Areas of fluctuating winds are normally turbulent, as are areas of spiraling motion; the latter are denoted by curved arrows.

Northwest Wind

Northwest winds occur 12 to 39% of the time in San Francisco, depending on the season. (In meteorology, a northwest wind blows from the northwest). Northwesterly and westerly winds are the most frequent and the strongest winds at all seasons in San Francisco. Northwest winds exceed 13 miles per hour 35% of the time and 25 miles per hour 3% of the time in the summer. (These windspeed categories are used because wind frequencies and speeds are lower in spring, fall, and winter.)

Existing site conditions for northwesterly winds are shown in Figure B-1, p. 213. Windspeeds near the proposed site vary from low to high, with the strongest winds occurring at the Mason and O'Farrell Streets intersection.

Figure B-2, page 214, shows conditions for the proposed highrise concept. The highrise would reduce winds at the Mason and O'Farrell Streets intersection, but would increase the windspeed ratio at the corner adjacent the site and along O'Farrell Street. Windspeed ratios at the Ellis and Mason Streets intersection and along Ellis Street to N. 5th St. would be, in most cases, unchanged. At the N. 5th and Mason Sts. intersection and along N. 5th St., increased winds would also occur. Windspeed ratios resulting from this project would range from low to high, with the highest occurring along Mason Street adjacent the site. Windspeed ratios at the front entrance to the Heine Piano Co. building would increase from moderately low to moderate. Windspeed ratios at the front entrance to the Maria Manor Hotel would be unchanged.

The No-Bonus Alternative would have similar wind impacts (see Figure B-3, p. 215). Windspeed ratio changes along O'Farrell and Mason Streets would be 0.5% less than the proposed project.

West Wind

West winds occur between 15 and 40% of the time, depending on the season. They exceed 13 miles per hour 29% of the time and 25 miles per hour 7% of the time in summer. Wind strengths and frequencies are somewhat lower in spring, fall and winter.

Figure B-4, p. 216, shows existing conditions for westerly winds. The highest windspeed ratios near the proposed site were found at the Mason and O'Farrell Streets intersection, where winds ranged from low to moderate. Low winds were found in all other area, except the southeast corner of 5th and O'Farrell Streets intersection where moderately low windspeed ratios were measured, and at the 5th Street/Eddy intersection near Hallidie Plaza.

The proposed highrise concept (Figure B-5, p. 217), had windspeed ratios ranging from low to moderately high. Increases were found along Ellis Street with the exception of the southwest corner of the 5th and O'Farrell Streets intersection. Windspeed ratios increased along O'Farrell Street adjacent the site, except at the O'Farrell/Mason intersection, where windspeed ratios decreased. Windspeed ratios at the entrance to the Heine Piano Company building would increase from low to moderate. Windspeed ratios at the entrance to the Maria Manor Hotel would increase from low to moderately low.

Windspeed ratios for the No-Bonus Alternative are shown in Figure B-6, p. 218. Wind impacts are similar to those for the proposed project, except along O'Farrell Street adjacent the site. Increases are less than for the project, but are in the same "moderate" category.

VI. MITIGATION MEASURES

There are 2 types of mitigating measures for wind. The first is to make major design changes to reduce winds near the project, such as different

building orientations or changes in size or shape. Designs that put the bulk of the project away from O'Farrell Street and Mason Street would reduce impacts along these streets, and would reduce the extent of shadows.

The second type of mitigation measure involves additions to the project that would provide local shelter for pedestrians. Small structures such as kiosks for newspaper or flower vendors, telephone booths, and shelters at bus stops can serve in this way. Similarly, street trees and other vegetation can function as windbreaks. These types of measures would be appropriate along O'Farrell Street and along Mason Street where the project results in higher winds. Those mitigation measures proposed for incorporation within the project design by the project sponsor are stated in Section V, Table 26, p. 150.

VII. BIBLIOGRAPHY

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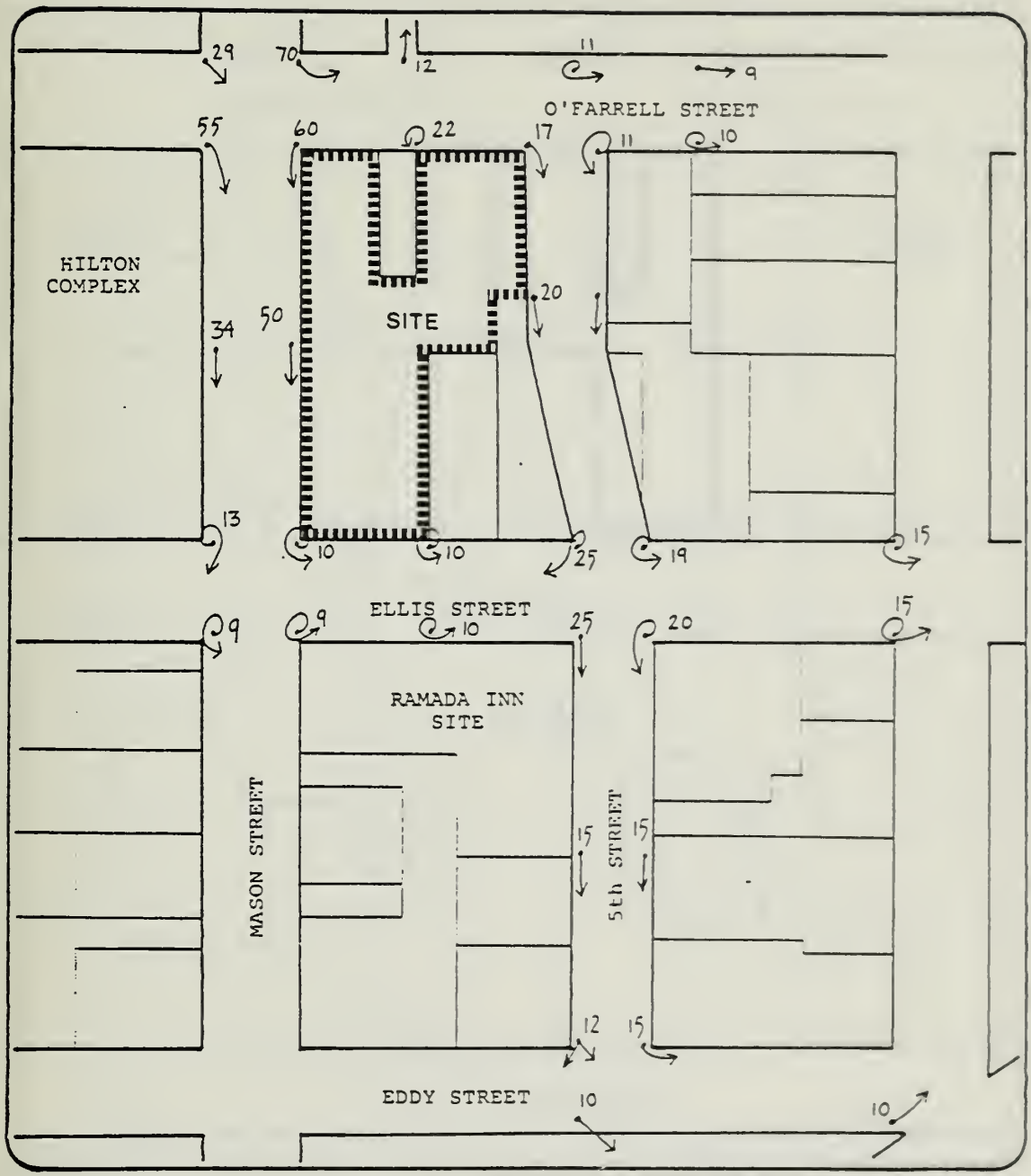
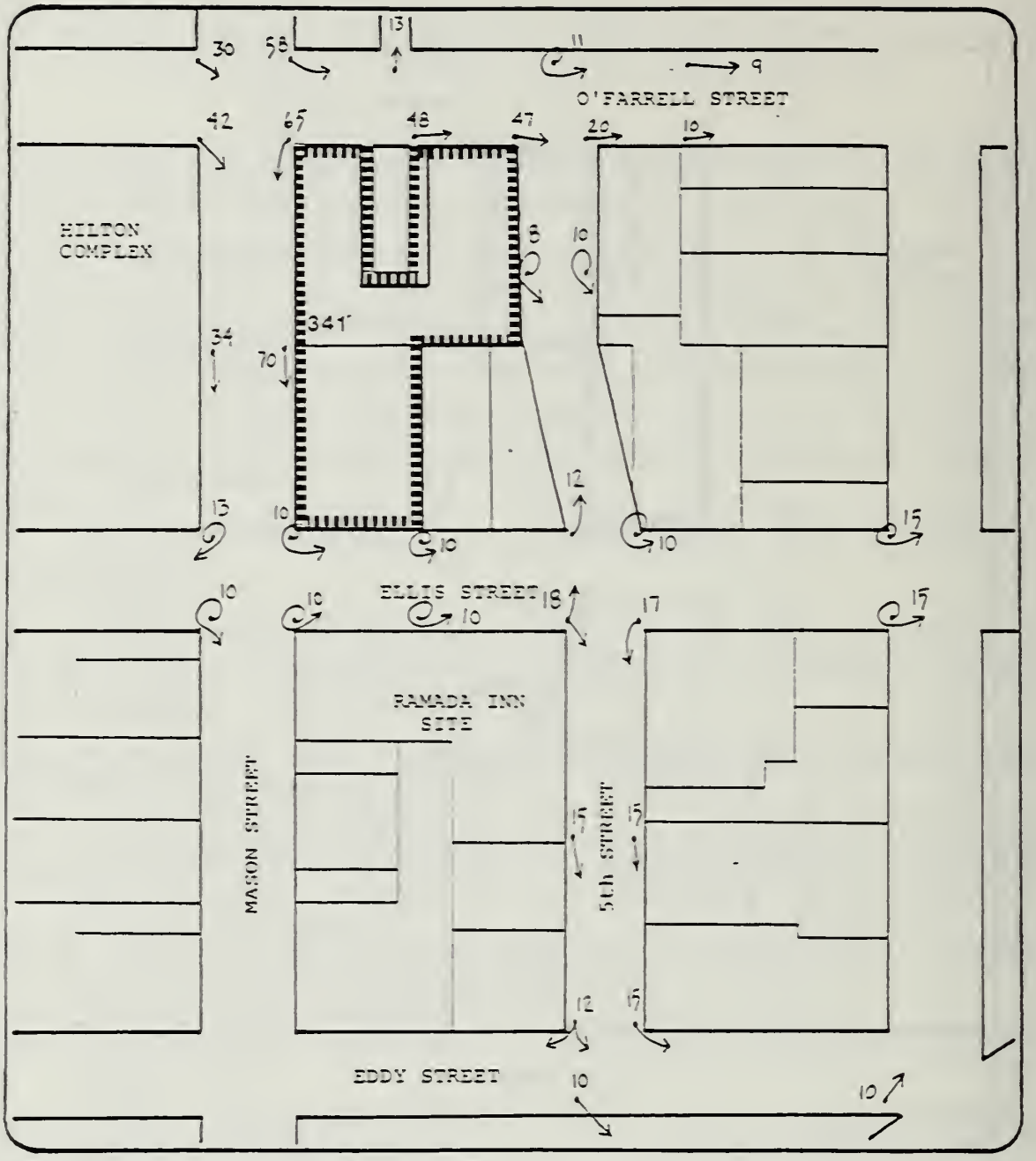


Existing Site
Northwest Winds

North
Not to Scale

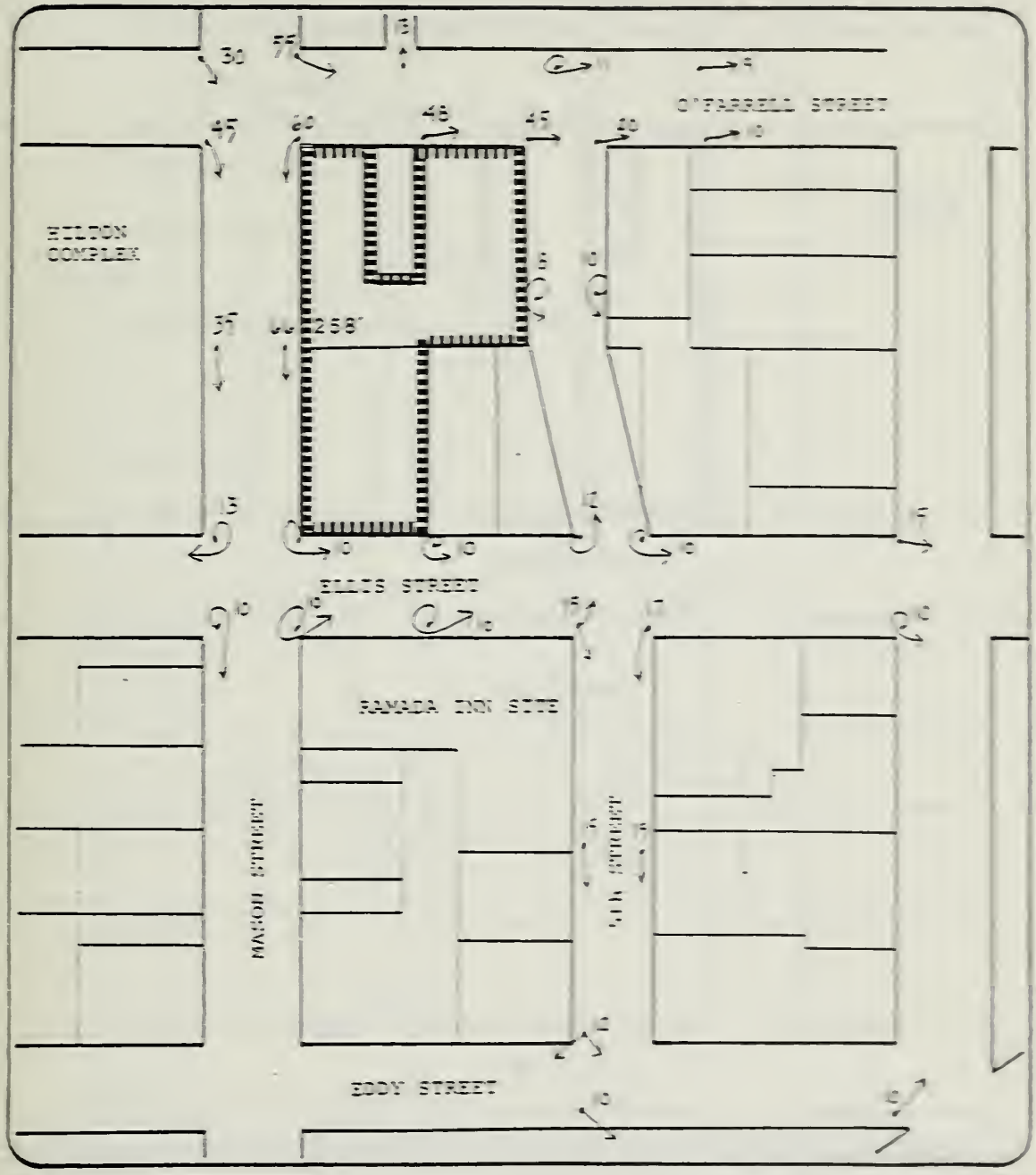
Figure No. B-1



Proposed Project
Northwest Winds

North
Not to Scale

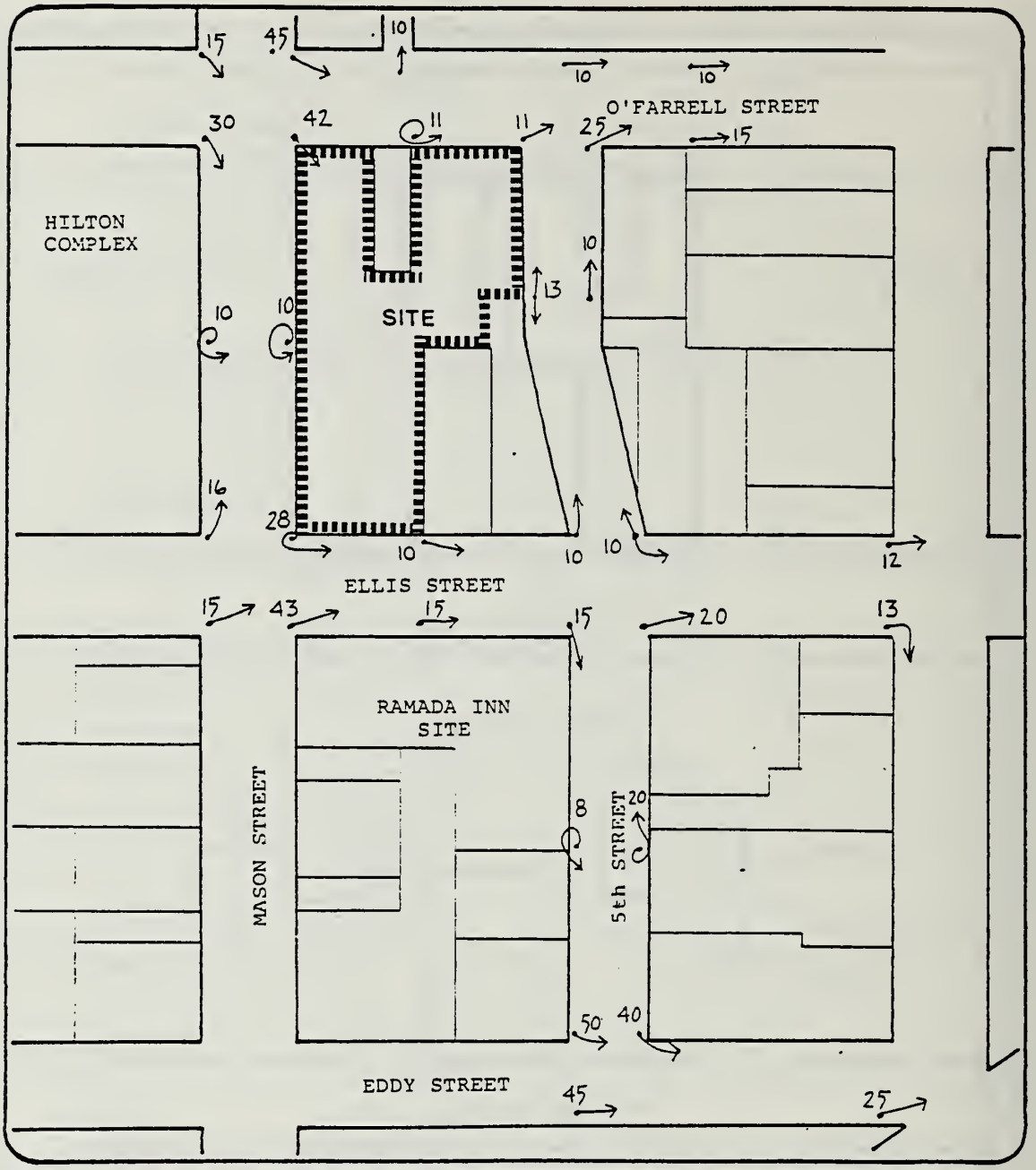
Figure No. B-2



No-Bonus Alternative
Northwest Winds

Not to Scale

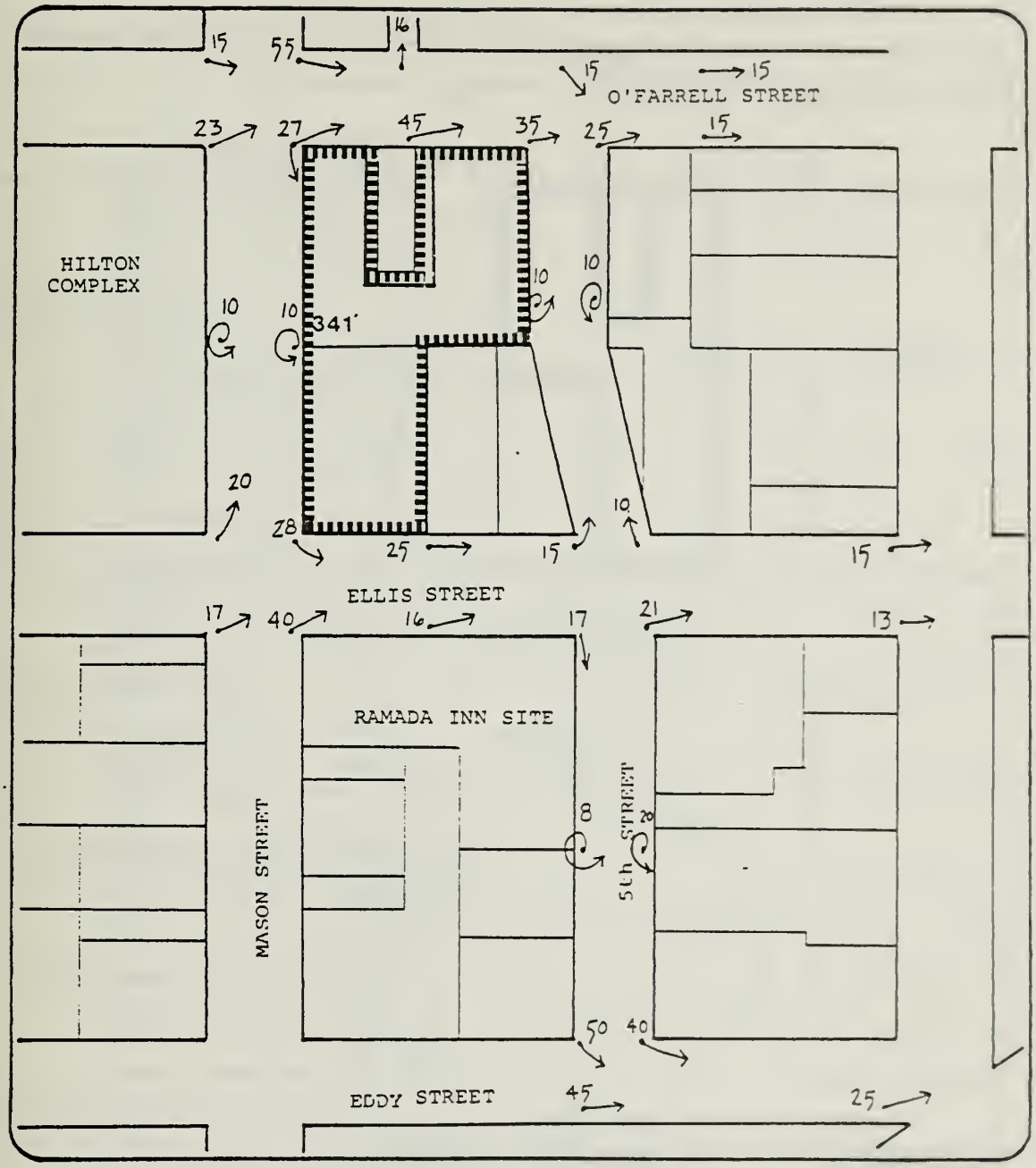
Figure No. B-3



Existing Site
West Winds

North
Not to Scale

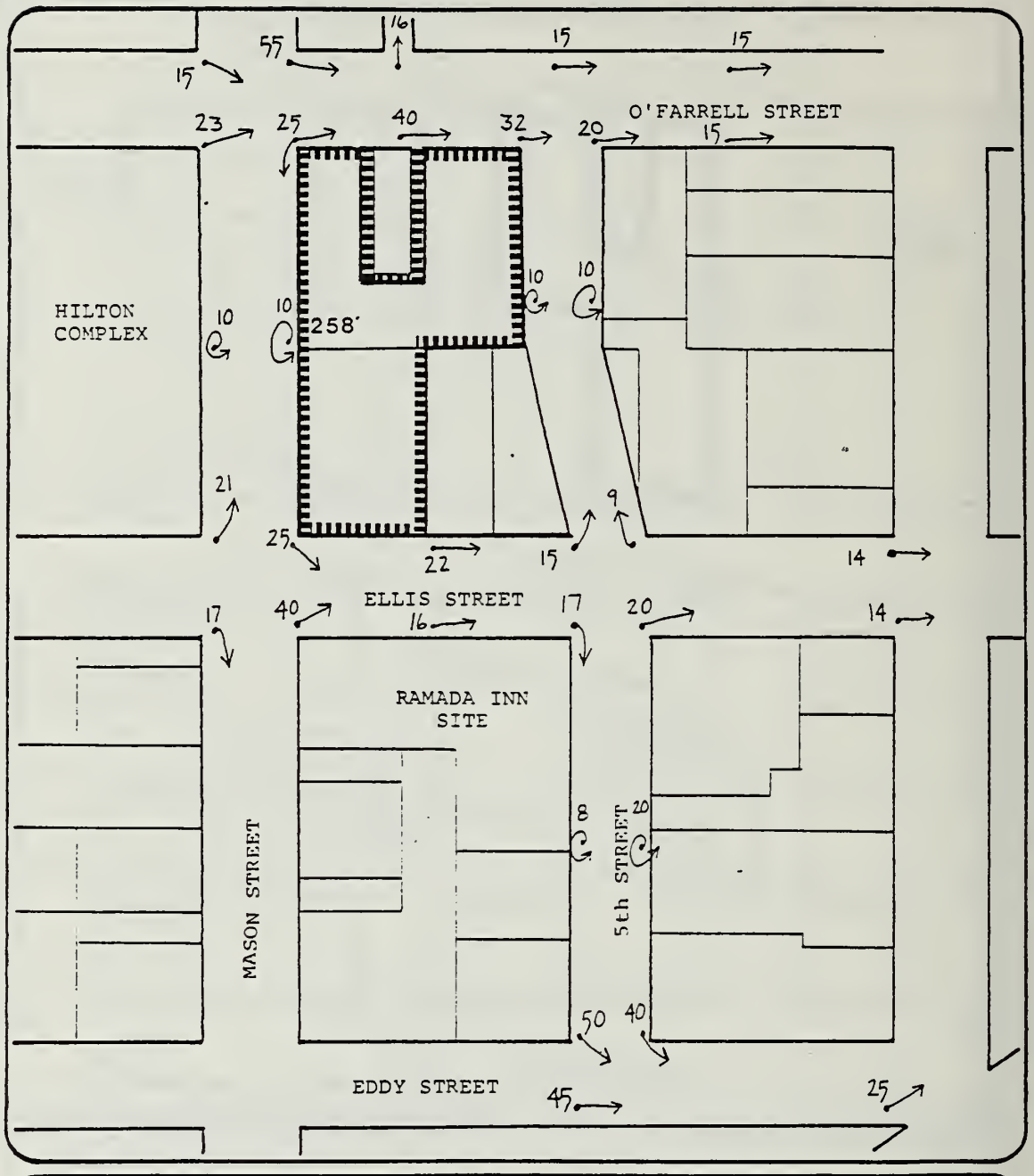
Figure No. B-4



Proposed Project
West Winds

North
Not to Scale

Figure No. B-5



No-Bonus Alternative
West Winds

North
Not to Scale

Figure No. B-6

APPENDIX C: TABLE C-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1977-1979

STATION 939 Ellis Street, San Francisco

POLLUTANT	STANDARD	1977	1978	1979
OZONE (O_3) (Oxidant)				
1 hour concentration (ppm)/a/				
Highest hourly average	(0.08) 0.12/b,c/	0.05	0.11	0.08
Number of standard violations		(0) 0	(4) 0	0
Expected Annual Violation		0.3	0.3	0.0
CARBON MONOXIDE (CO)				
1 hour concentration (ppm)				
Highest hourly average	35/b/	16.0	17.0	20.0
Number of standard violations		0	0	0
8 hour concentration (ppm)				
Highest 8-hour average	9/b/	8.9	9.4	13.8
Number of standard violations		0	1	2
NITROGEN DIOXIDE (NO_2)				
1 hour concentration (ppm)				
Highest hourly average	0.25/d/	0.21	0.30	0.16
Number of standard violations		0	4	0
SULFUR DIOXIDE (SO_2)				
24 hour concentration (ppm)				
Highest 24-hour average	0.05/d/	0.035	0.024	0.034
Number of standard violations/e,f/		0	0	0
TOTAL SUSPENDED PARTICULATES (TSP)				
24 hour concentration (ug/m^3)/g/				
Highest 24-hour average	100/d/	105.0	128.0	117.0
Number of standard violations/f/		1	1	1
Annual concentration (ug/m^3)				
Annual Geometric Mean	60/d/	41	42	42
Annual Standard Violation		No	No	No

/a/ppm: parts per million.
/b/Nation standard, not to be exceeded more than one per year (except for annual standards which are not to be exceeded).
/c/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January 1979. The number of violations shown in parentheses is of the old 0.08 ppm standard in effect at the time. Expected Annual violation is a three-year average of annual violations of the new 0.12 ppm standard.
/d/ California standard, not be equaled or exceeded.
/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent violation of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.
/f/ Number of observed violation days (measurements taken once every six days).
/g/ ug/m^3 = micrograms per cubic meter.

Source: Bay Area Air Quality Management Distict (formerly Bay Area Air Pollution Control District), Contaminant and Weather Summaries.

APPENDIX D, TABLE D-1:

SAN FRANCISCO QUARTERLY AIR LEAD CONCENTRATIONS
IN MILLIGRAMS PER CUBIC METER, mg/m^3

	939 Ellis Street Monitoring Station				900 23rd Street, Potrero Monitoring Station			
Year	JFM	AMJ	JAS	OND	JFM	AMJ	JAS	OND
1976*	0.00180	0.00185	0.00175	0.00280	0.00082	0.00084	0.00082	0.00195
1977*	0.00183	0.00100	0.00108	0.00139	0.00108	0.00066	0.00068	0.00103
1978*	0.00097	0.00095	0.00119	0.00108	0.00086	0.00051	0.00083	0.00089
1979*	0.00090	0.00054	0.00059	0.00095	0.00079	0.00050	0.00033	0.00046

* Data from Information Bulletin 4-4-79, BAAQMD, 1979.

**Data from CA Air Quality Data-Summary of 1979 Gaseous and Particulate Pollutants; Teresa Lee, Public Information, BAAQMD, phone conversation, 12 August 1980.

Source: Bendix Environmental Research, Inc., in San Francisco ADEIR EE 80.110, 137 Unit Condominiums, 2222 23rd Street, 1980.